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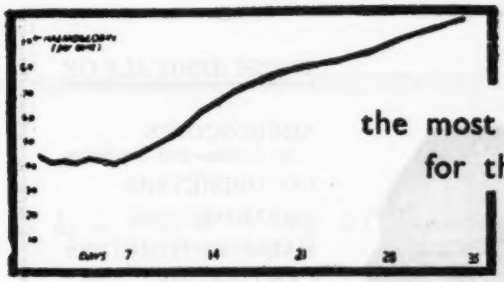

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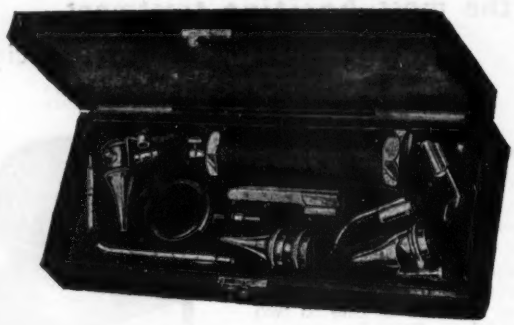

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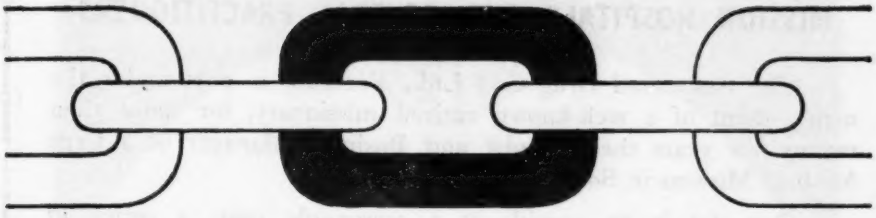

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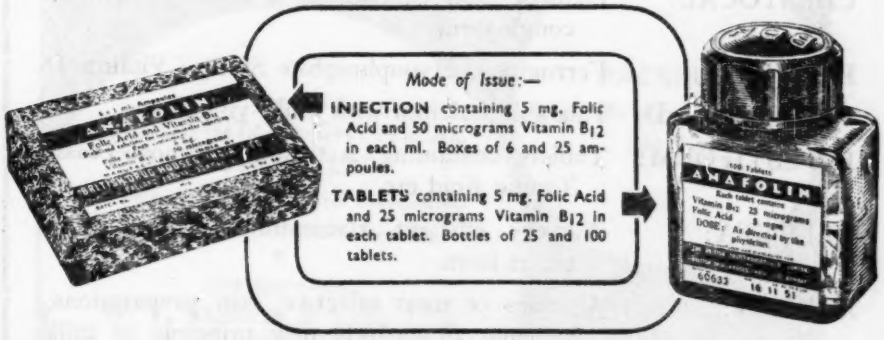

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ANÆSTHESIA AT THE CLARA SWAIN HOSPITAL, BAREILLY, U.P., INDIA, 1941-1953*

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IN THE JOURNAL OF THE CHRISTIAN MEDICAL ASSOCIATION OF INDIA, July 1950, we reported our experience with local and general anæsthesia at the Clara Swain Hospital over an 8 year period (1941-1949), involving observations on somewhat more than 4,500 cases; of these, almost 3,000 were with general anæsthesia, using a special mask of our design. In the series there was one death, attributable to general anæsthesia, and there was a second sudden death for a patient given spinal anæsthetic by a visiting specialist.

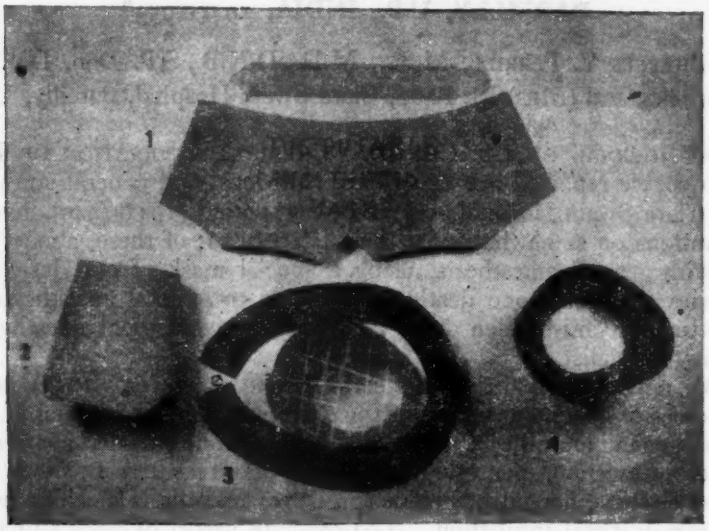
We now wish to bring our series up to date (May 1953), adding 2,178 cases of general anæsthesia (136 obstetrical), making a total of 5,057 cases of general anæsthesia. Included in this group are perhaps a dozen cases of intravenous pentothal anæsthesia and, recently, 15 cases using a closed circuit ether-nitrous oxide (pressure) anæsthesia machine usually with intra-tracheal intubation. The separate group of cases using local anæsthesia are at least as numerous as those of general anæsthesia, in addition to the considerable series of dental and chest clinic cases given local anæsthesia almost routinely. The total series to be reported thus comes to about 10,000 cases (exclusive of dental and chest) over a period of 11 years.

We can again report that general anæsthesia as practised at the Clara Swain Hospital has been remarkably successful for the following reasons:

1. The use of a special mask which provides for a moderate amount of rebreathing. This mask, of which I have brought samples for your inspection, contains a tight fitting rim applied carefully to the patient's face. The sides are high enough to provide a full-sized cup in which the ether vapour, being 2½ times as heavy as air, can pool, behaving like a liquid. When the patient inhales he receives a high concentration of ether vapour; during exhalation the oxygen, nitrogen, carbon dioxide and water vapour, being much lighter than the ether, float off the top. The ether again settles to the bottom of the mask, ready for the next inspiration.

* Paper presented by Dr. C. V. Perrill at the Landour Community Medical Meetings, Mussoorie, U.P., India, June 1953.

2. Safety. The above mask makes possible the efficient use of ether, which is still the safest anæsthetic known. In this series of 5,000 cases there were 3 deaths on the operating table; one was clearly due to hemorrhage and shock; one was during chloroform induction, and the third was an infant undergoing an extensive hare-lip-cleft palate operation (also debatable as an anæsthetic death). Our anæsthetists have been no fewer than 5 persons, all trained locally with emergency cases handled also by nurses who had received minimal training and experience in anæsthesia. In the above series possibly half of the cases have been induced, using a mixture of 1 part chloroform and 3 to 4 parts ether.



A

Disposable (cardboard) ether mask used for anæsthesia at the Clara Swain Hospital. Four steps in its construction.

The common criticism of ether is its unpleasant smell and the delay which may occur during the induction period—with an inefficient mask the patient may not even go to sleep. The smell of chloroform is less objectionable and it is highly potent—dangerously so in this mask of high efficiency. Chloroform-ether mixtures are therefore used, but they behave rather peculiarly, the ether serving mainly as a diluent to the chloroform; for example in a 3 part ether 1 part chloroform mixture, 90 per cent of the anæsthetic effect is caused by the chloroform. The mixture, although highly potent, is less dangerous than chloroform alone, and our experience with it in adults, for induction only (we do not use it for children)—is very favourable, although two cases in the early part of the series (one fatal) convinced us that even a small amount of chloroform is dangerous and that the change-over to pure ether should be made as soon as the induction is completed. We feel that the careful use of chloroform is justifiable, and note that it is again being used in the United States.

3. In this series we have completely eliminated morphine as a pre-anæsthetic drug. We use scopolamine (hyoscine) by injection and chloral hydrate by mouth half an hour before the anæsthetic, and feel certain that this pre-operative sedation aids in the smooth and effective induction which almost invariably occurs. The special mask produces a moderate and constant degree of rebreathing of carbon dioxide, making for excellent respiratory movements, so that the patient responds rapidly to the anæsthetic. Thus the induction is more rapid and the recovery later on is also quicker. This deeper and more active respiration, not

B

Disposable (cardboard) ether mask in use. The tight fit against the patient's face should be noted.

interfered with by morphine, is also a factor in preventing pulmonary atelectasis and in reducing post-operative nausea and vomiting of which we experience relatively little. The eye signs are not masked as they may be when morphine and atropine are used, or when the carbon dioxide levels fluctuate. In this series there are a few cases, mostly emergency surgery, in which scopolamine and chloral hydrate premedication has been insufficient or omitted entirely. This results in a stormy induction and, if the anæsthetist is timid, there is vomiting and insufficient relaxation. One such case resulted in an improper abdominal closure and a subsequent evisceration. On secondary closure under general

anæsthetic further difficulty with vomiting was encountered and it was necessary to push the anæsthetic until the respiration ceased. With ether anæsthesia this is not dangerous, provided the air-way is clear, the circulatory system is not in collapse, and the anæsthetist is prepared to give effective artificial respiration (mouth to mouth breathing or the use of a closed pressure anæsthetic machine), although this is seldom necessary. These patients promptly resume respiratory movements when the ether is discontinued, which is done very rapidly simply by changing the mask.

There is one condition, Cæsarean section, in which the chloral hydrate and scopolamine premedication produces definite drowsiness of the infant, and it is suggested by one of our staff members that this may have been a factor in one or two still births and cases of infant asphyxia with subsequent death which have occurred in this series. While this contention is not proved, we agree that for Cæsarean section a definitely lighter premedication (avoiding chloral hydrate) should be used, even though this may result in some difficulty during the induction period.

Perhaps I should mention the precautions to be taken with any general anæsthetic. Before starting, the stomach should be empty; this is especially important with sodium pentothal, as vomiting may produce serious or even fatal laryngospasm. Whenever in doubt, it is wise to pass a stomach tube. For abdominal cases it is helpful if a Levine tube is kept in place during the operation; the tube is aspirated occasionally, but the upper end should be left open and hanging down so as to drip freely. With the aid of the surgeon's hand, the gas bubble in the stomach can be eliminated along with saliva and gastric juice which is also present, sometimes in large amounts. The air passage should be kept constantly unobstructed and free from mucous. The latter may be troublesome in patients who have received insufficient scopolamine. An electric suction machine can be shared with the surgeon by means of a Y tube and suitable clamps and catheter. Or a rubber bulb syringe fitted to an ordinary catheter, size F 12, may be used to aspirate mucous from the trachea as far down as the carina.

At the time of starting a general anæsthetic any nose rings, ear-rings and false dentures should be removed and a rubber (cork) stopper flattened on two sides and attached to a heavy string is placed between the molar teeth of one side. The patient is told to bite gently. During the induction the jaw usually becomes firmly set on the rubber which prevents the mouth from closing tightly, a matter of great advantage to the anæsthetist in case of sudden vomiting and laryngeal spasm. As soon as relaxation of the jaw occurs, a Guedel rubber-covered air-way is inserted in the mouth and the (cork) rubber is pulled out. Any kink in the patient's airway (usually due to the tongue falling backward) is eliminated by raising the angle of the jaw and rotating the patient's neck backward. Tracheal secretions are aspirated by threading the catheter down the Guedel airway. This remains in place until after the operation, when the patient attempts to push it out. The anæsthetist always accompanies the patient to the ward in order to take care of any episode of vomiting which may occur while the patient is in transit and to see that the nursing attendant is able to cope with the patient's recovery problems.

The importance of the fact that ether vapour is much heavier than air ($2\frac{1}{2}$ times) is generally overlooked. This causes the ether vapour to behave like a liquid—it is actually poured on to an ordinary mask and rapidly flows off it (or out of any cracks in the special mask) down on to the floor which it may cover like a blanket, even becoming a fire (but not explosion) hazard. The mask should therefore be accurately applied to the face, as tight fitting as the mask used on a closed circuit anæsthesia machine. The fit of the cardboard mask can be improved by enclosing it in the wrist part of an old rubber glove after cutting off the fingers. In addition, we usually wrap a towel snugly around the face and lower part of the mask, unless this would interfere with the surgical field.

The series includes 15 cases of major thoracic surgery, using a closed circuit anæsthetic machine, complete with intra-tracheal intubation. One of our locally trained anesthetists (Mrs Paul) quickly learned the running of this machine and no serious anæsthetic complications have occurred in these 15 cases. However, this type of anæsthesia is far more treacherous than the open system and is not to be recommended for a beginner. Due to marked variations in the carbon dioxide content of the closed system, certain peculiar reactions occur in strange combinations. The pupil signs, so useful in the open method, become almost worthless; if too much carbon dioxide accumulates (due to exhaustion of the soda lime for example), the blood pressure and pulse rate may rise and the pupils dilate, without any reference to the depth of anæsthesia, or, if all the carbon dioxide is removed from the system, the patient's respiratory rate and excursions may become unsatisfactory resulting in anoxia and cyanosis; in this condition artificial respirations (pressure anæsthesia) may only aggravate the acapnia, and the anæsthetist becomes further confused and the surgeon inconvenienced when the patient is suddenly found to be on too light an anæsthetic plane. To add to the above confusion are the pulse and respiratory phenomena which appear as shock develops.

We have not used intravenous anæsthesia (sodium pentothal) in a large series of cases because of the excellent results obtained using ether on the special mask, or local anæsthesia. In certain cases of oral surgery, intravenous anæsthesia is, however, to be preferred and is well liked by our surgeons and dental surgeon, who are thus able to pack off the back of the mouth and work in an unobstructed field.

The matter of heat exchange during general anæsthesia is of considerable importance for a warm climate country such as India. Bigler and McQuiston[1] have reported severe febrile reactions of infants and children during anæsthesia with closed circuit machines during hot weather in the U.S.A. We have not yet noticed this tendency (which should also apply to adults) with our closed circuit machine, but are guarding against it by the use of a fully air-conditioned operating theatre. If we must give pressure anæsthesia to children during extremely hot weather, no doubt it will be advisable to use a 'hyper-pyrexia water mattress' of the type advocated by the above authors. But most of our surgery is done, using the special ether mask in which the heat producing factors are just the opposite of the situation encountered in a closed circuit machine in which the patient rebreathes 100 per cent moist gas, heated by the soda lime during the process of removing the carbon dioxide. With our ether mask the normal heat loss, which is

considerable, due to evaporation of moisture from the lungs, continues without interruption. In addition, there is the tremendous refrigerant action of evaporating ether, which absorbs about 900 calories per ounce of ether vapourized in the mask. During a 3 hour anæsthetic, when 6 ounces of ether are vaporized, 5,400 calories of heat are absorbed in the gauze placed an inch from the patient's nose. If as little as 10 per cent of this refrigerant action goes to cool the patient, there would still be 540 calories of heat absorbed in 3 hours—or at the rate of 4,300 calories per day, which would be about twice the patient's total body heat loss, or metabolism. A glance at the ether mask, covered with frost even on a hot day, will account for the fact that we do not experience febrile reactions during anæsthesia with the ether mask, although a 'reactive' fever not infrequently occurs in hot weather during the hours which follow surgery.

Our experience with local anæsthesia (mostly procaine 1 per cent and 2 per cent) remains excellent; no fatalities or serious reactions have occurred during the 11 year period under review. During the past two years, at the time of giving the injection we have added a small amount of adrenalin (as a vaso-constrictor) and sodium bicarbonate (to prevent any subsequent local tissue reaction and soreness) and have observed that the local anæsthetic is more effective and lasts considerably longer. Local anæsthesia of this type can be used for major surgery. For example, it is useful in cases of suspected malignancy of the liver and gall bladder in whom exploration is advisable. Under local anæsthesia a small incision is made over the mass, usually the liver. If a malignancy is encountered, a biopsy is taken and the small incision is closed with a few cotton sutures. The patient can then spend his final days at home. If an operable condition is found, the wound is enlarged and the operation may be performed entirely under local anæsthesia, or general anæsthesia can be added for the closure so as to avoid the necessity of re-anæsthetizing the abdominal wall. The procaine and sodium bicarbonate solutions are prepared in our own pharmacy at small cost. They are renewed weekly as there is some doubt as to the length of time such solutions may be kept safely. In the dental clinic packaged commercial procaine anæsthetic solutions in ampoules (carpules) are used because of the convenience. Such carpules are now freely available, although somewhat more expensive. They do not deteriorate quickly.

In conclusion, to summarize, this paper presents our further experience with various anæsthetics at the Clara Swain Hospital. Several locally trained anæsthetists have participated, some of whom were, admittedly, inexperienced. Our results, both with local anæsthesia, and with the special mask which we have adapted to our needs, have been excellent. We can recommend these procedures for widespread use throughout India and other parts of the world.

1. Body Temperatures during anæsthesia in Infants and Children, Bigler, John A. and McQuiston, Wm. Otis., *A.M.A. Journal*, June 9, 1951, 553-556.

(Also see Advertisement *A.M.A. Journal*, April 11, 1951, 151: 66. Hyper-pyrexia Water Mattress, Davol Rubber Co., Providence 2, R.I.)

THE MANAGEMENT OF DIFFICULTIES ENCOUNTERED IN SPINAL ANÆSTHESIA*

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AN anæsthetic agent is only as safe as the anæsthetist who administers it. This is true of all of the agents which are in common use. For example, procaine is an excellent local anæsthetic agent, but, if the anæsthetist administers a total dose larger than the toxic dose, he is inviting disaster, or, if in anæsthetizing a finger he infiltrates the entire base with procaine containing epinephrine and then uses a rubber band at the base of the finger as a tourniquet, he is courting trouble. Spinal anæsthesia, better termed spinal analgesia, is an excellent and safe form of anæsthesia when administered by an anæsthetist trained in its use. During the past eleven years, I must have used spinal anæsthesia or observed its use in over two thousand cases, and I do not recall any anæsthetic deaths or serious anæsthetic complications among this number. Spinal anæsthesia may be used for almost any operation below the diaphragm and has an overwhelming advantage in lower extremity and perineal surgery. For the patient who objects to the word 'spinal', the term 'subarachnoid block' can be used to advantage.

Disasters with spinal anæsthesia have resulted when it has been used in cases in which it was contraindicated. It should not be used in patients whose condition is too serious for a general anæsthetic. The desire to dispense with the services of the anæsthetist should not be an indication for its use. Spinal anæsthesia has the following major contraindications:

1. Organic disease of the central nervous system.
2. Disease of the vertebrae.
3. Chronic backache.
4. Infection in the lumbar region.
5. Marked debility, severe anemia, and poor general condition.
6. Septicemia.
7. Frequent headaches.
8. Serious reactions with previous spinal anæsthesia.
9. Hypersensitivity to available drugs.
10. Shock.
11. Psychotic and emotionally unstable individuals.
12. Fear of spinal anæsthesia by the patient.

Difficulties Encountered and their Management

Difficulty in making the puncture

This difficulty may result from scoliosis, arthritis, and other vertebral changes, or from incorrect positioning of the patient. The back should be well flexed, and, if in the lateral position, it should be perpendicular to the table, with the upper shoulder directly above the lower. However, flexion of the back is not always necessary, and a puncture can often be successfully made with the patient in the prone position. In the event

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that the usual midline puncture is unsuccessful, a lateral puncture may be attempted.

The Spinal Needle breaks

This is a complication which I have never witnessed and is usually due to a defect in the needle. Needles should be cared for and kept from rusting. All needles should be tested with the stylets removed before being used. Care should be taken to prevent the patient from moving during the puncture. The co-operation and the confidence of the patient is usually easily retained by warning him at the time the antiseptic solution is applied to the skin and the local anæsthetic is injected at the puncture site and then by requesting him to lie quietly during the remainder of the procedure. When a needle breaks, its localization and removal are aided by passing a second needle in the same interspace and then taking antero-posterior and lateral x-rays.

Hypotension

Hypotension is one of the most common difficulties encountered during spinal anæsthesia and has probably been the most common cause of death due to spinal anæsthesia. It is due to arteriolar and capillary dilatation in the areas from which sympathetic control has been temporarily removed, with consequent stagnation in those areas. It appears within twenty minutes and is aggravated by alterations in the patient's position. Hypotension is easily prevented and treated. It may be treated by (1) using vasopressors, preferably intravenously; (2) rapidly administering isotonic solutions, such as 5 per cent glucose in water, to maintain the blood volume; (3) placing the patient in the Trendelenburg position or raising his legs to return the pooled blood from these extremities; and (4) administering oxygen. These methods are also useful in the prevention of hypotension. It is advisable to inject a vasopressor immediately upon, or a few minutes before, the administration of the anæsthetic agent. Ephedrine in 50 mg doses is useful for this. Methodrine and neosynephrine are other vasopressors used in spinal anæsthesia. It is advisable to have 5 per cent glucose in water or other intravenous fluids running in during the operation. This will permit the immediate and rapid administration of fluids and vasopressors in the event hypotension develops. With a needle in a vein it is a simple matter to administer sedatives and other drugs intravenously or to start blood or plasma. The vasopressor drug to be used should be ready for instant administration. The pulse and pressure should be checked every 2-3 minutes during the first 20 minutes and then every 5-7 minutes thereafter. It is advisable to have an anæsthetist present to look after the patient. Violent changes in position, such as shifting a patient from the supine to the lateral position, will produce hypotension. Placing the patient in Fowler's position will result in severe hypotension.

It is more important to administer the vasopressor prophylactically to the hypertensive patient than to the patient with normally low pressure, because the former is less capable of compensating and is more susceptible to thrombosis following a period of hypotension. However, this should be done cautiously in order to prevent a cerebral accident. Hypotension due to blood loss should, of course, be treated by the administration of blood or plasma, preferably the former.

Nausea

Nausea during spinal anæsthesia is usually due to hypoxia resulting from hypotension. Oxygen is of value in relieving the hypoxia, and the hypotension should, of course, be immediately treated. Nausea may also result from marked elevation of the pressure and from manipulation of the abdominal contents. A few deep breaths often relieve the nausea. Intravenous sedation is also of value.

Respiratory Paralysis

Complete intercostal and diaphragmatic paralysis is a complication which I have never witnessed. This can be easily controlled by artificial respiration with oxygen, using a mask or endotracheal intubation.

Incomplete and Delayed Anæsthesia

Occasionally, the spinal anæsthesia does not take effect. The anæsthetic agent may be inert. This failure of anæsthesia may be due to precipitation of the anæsthetic by alkali. All water used for sterilizing syringes, needles, and ampoules should be distilled. It is well for the spinal needle to be rinsed out with the anæsthetic agent at the time of making the puncture, to remove residual alkali. Blood in the spinal fluid will also interfere with the production of the anæsthesia. Following a bloody tap, prior to withdrawing the needle and making a puncture in another interspace, it is wise to let the spinal fluid drop for a few seconds to see if it will clear up.

Failure to secure anæsthesia is most often due to a failure to inject all or part of the agent. This may occur if the needle becomes dislodged prior to the injection. If the needle used has a long bevel, only part of the bevel may be inside the subarachnoid space and, in this event, part of the agent escapes extradurally when the injection is made.

Spinal anæsthesia may be delayed or incomplete because of inadequate sedation. The pre-anæsthetic medication should be adequate. For young adults, I often order Nembutal grains 1½ two hours prior to the time of the anæsthesia and Morphine grain 1/6 with Atropine grain 1/150 75 minutes later. At any time during the operation, sedatives and analgesics may be given intravenously.

Inadequate Anæsthesia

Frequently, the level of the anæsthesia is not adequate or it wears off before the end of the operation. There are several factors that may affect the level of the anæsthesia, such as (1) the quantity of the drug used, (2) the volume of the anæsthetic solution, (3) the concentration of the drug in the solution, (4) the rate of injection, (5) the site of injection, (6) the specific gravity of the solution, and (7) the position of the patient. The easiest way to control the level of anæsthesia is to add to the anæsthetic solution an equal amount of 5-10 per cent glucose solution, making it hyperbaric. Its distribution in the spinal canal can then be controlled by gravity. When very low analgesia is required, the anæsthetic solution may be injected with the patient sitting up. When high analgesia is required, following the injection the patient is placed in Trendelenburg until the desired level is reached. The level of anæsthesia (sensory) should be three segments above the level of the required muscular relaxation.

A difficulty in obtaining a high enough level may occur if the injection is made in the 4th or 5th interspace, because the lumbar curve may prevent the anæsthetic solution from going craniad even when the patient is in moderate Trendelenburg. Making the injection in the third interspace will prevent this difficulty. When placing the patient in Trendelenburg, to secure the proper level the head should always be elevated to prevent the anæsthetic from going too high.

The duration of anæsthesia is also affected by the factors which determine the height of anæsthesia. It is determined, however, to a greater extent by the drug which is used. Procaine is short acting, Pontocaine (Pantocaine) longer acting, and Nupercaine the longest acting of the commonly used drugs. If 0.1 c.c. epinephrine is added to the anæsthetic solution, the duration of the anæsthesia is markedly prolonged. A useful plan to follow is to use Procaine for operations lasting less than an hour, pontocaine for operations lasting 1-2 hours, pontocaine with epinephrine for operations lasting more than 2 hours, and the hypobaric nupercaine preparation for procedures in which a hypobaric technique is desired. Continuous spinal anæsthesia may also be used for long operations.

Post-anæsthetic Headaches

Post-anæsthetic headaches frequently occur. It is generally thought that this is due to leakage of spinal fluid. The incidence of headache can be minimized by the use of small-gauge needles. Introducers, which are really large gauge needles through which the spinal needle may be inserted, may be used. If the spinal needle is introduced with the bevel facing the side of the body, separation of the longitudinal fibers of the dura will result, instead of cutting of these fibers, which occurs when the bevel faces the head or foot of the patient. The former will leave a much smaller hole in the dura. The headache is usually relieved by the use of mild analgesics. If persistent, the headache will usually respond to the caudal or spinal injection of 20 c.c. physiological saline solution.

Post-anæsthetic Meningitis

Meningitis following spinal anæsthesia has been reported, but I have never seen this complication. Chemical inflammation of the meninges and cord has resulted from the accidental introduction of the antiseptic from the skin into the intrathecal space by the spinal needle or by contamination of the needle or syringe with the antiseptic. This can easily be avoided. It is also important to prevent contamination of the anæsthetic solution or needles with water or antiseptic solution which might drip off elbows or forearms which have not been properly dried. Inflammation of the meninges may also result from the use of impure or deteriorated drugs or even by the injection of a wrong drug. This can be prevented by the use of fresh and reliable preparations. Individual ampoules should be used for each case.

Bacterial meningitis can be prevented by strict adherence to aseptic technique. The needles and syringes should either be autoclaved or boiled in distilled water. The ampoules should be examined before being used and should be discarded if they are cracked or if the drug has an abnormal appearance. A practice frequently used is to sterilize the ampoules in a coloured antiseptic solution so that, if a minute leak

is present, the presence of the antiseptic in the ampoule will be easily detected. Lundy reports a case clinically diagnosed as meningitis following spinal anæsthesia; on autopsy it was found that the meningitis was the result of metastases to the brain from a carcinoma of the colon.

Neurological Sequelae

Neurological sequelae have been reported, but have not occurred among the cases which I have observed. Some have been the result of a chemical meningitis. In the past, neurological complications occurred with use of the more toxic drugs, such as cocaine, beta-eucaine, stovaine and tropacocaine. Most of the recently reported sequelae are probably due either to chemical meningitis or to the use of high concentrations of the anæsthetic or to the use of normal concentrations in patients with neurological disease.

Conclusion

Spinal anæsthesia is an important and useful method of anæsthesia. It is easy to learn and is very safe, if the required precautions are taken.

Summary

1. The prevention and treatment of the various difficulties encountered in spinal anæsthesia have been discussed.

2. Spinal anæsthesia is an excellent and safe form of anæsthesia when properly administered, and may be used for almost any operation below the diaphragm.

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MILLIN'S PROSTATECTOMY*

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I WISH first of all to say thank you for the honour and privilege of addressing this conference—of standing, at least for a short time, where Dr Betts, Dr. Frimodt Möller, Dr Somervell and many others have stood. I have enjoyed very much the conferences I have attended, and it is a pleasure to take part in this one.

When the young, perhaps especially if they have the fortune or misfortune to look as young as I do, have the opportunity of addressing their betters, it is as well for them to talk about something they know something about. The title of the address therefore is, in fact, what the address will be about. I do not propose to discuss all the possible ways of removing the prostate gland, many of which I have never seen. Perineal prostatectomy, for instance, is virtually never performed in England. English surgeons believe it is liable to be followed by perineal fistula. If I am informed correctly, it is frequently performed in America, so obviously American surgeons do not feel the same way about it. In any case, anything I say about it will merely be culled from the text-books—and, for all I know, you may read the same textbooks.

Neither do I intend to discuss the symptoms of prostatic hypertrophy, which we all know perfectly well.

However, I do want to say a few things about the one or two stage suprapubic per-vesical or Freyer's prostatectomy. The names of Belfield and Fuller in America and McGill in England are all so well known in connection with this operation.

This is the usual operation performed by general surgeons for simple prostatic hypertrophy. There is no doubt that, from the surgeon's point of view, it is a good operation—the patients get better; at least, most of them. Not many die, but many more wish they would; and, if they don't get quite as far as that, they come through, having survived a shock to their nervous and mental systems far greater than the physical one.

I have watched them pass through the ordeal, or have talked to them afterwards. They are older and sadder people. They are very grateful for all that has been done for them, but they often speak about their operation in the hushed tones of one who has survived an earthquake. And it is not surprising, for, as well as the pain associated with any abdominal operation, to float for two or even three weeks in a sea of stagnant urine is enough to try the hardiest spirit.

It is bad enough in any climate, but a hot climate certainly does not improve the patient's comfort.

Irving's box (or the Hamilton—Irving box) well, Irving should have worn it—perhaps he did. Unless the patient has a very fat abdominal wall on which the box may reasonably fit, it adds only its own discomfort to a virtually unchanged condition. Moreover, prostatic hypertrophy

* Address given before Kodaikanal Medical Conference of the Christian Medical Association, 18-5-1953.

is a disease of elderly men who do not take kindly to hospitalisation. Float the patient on a sea of urine with a Marion's tube rising above his tummy like the funnel of a tug-boat, the funnel moreover leaking urine over his tummy wall, and it is not surprising that his mind is so frequently unequal to the strain. Mind you, these people are liable to mental upset whatever operation is performed, but, the sooner they can be returned to familiar surroundings, the better.

There are modifications, of course, of the Freyer operation designed to close the bladder at the time of operation. These are, however, not in common use by the general surgeon, and I will mention them again later.

I think I have said enough to cast doubts on the Freyer operation as being all that can be desired—at least, from the patient's point of view.

My justification for speaking to you about Millin's retropubic prostatectomy is an unusual one. It is based on the *smallness* of my series of cases.

I have seen it written, and I have heard it said when the results of Millin's prostatectomy have been discussed, 'Oh yes. It is an excellent operation in a big clinic with special instruments and with a person who has mastered the technique, but it is not an operation for the occasional prostatectomist. He should do the Freyer's operation'.

I want to prove to you that all but one of these statements is untrue.

The true statement is that it is an excellent operation. It causes the patient no more discomfort than a gastro-entrostomy, frequently allows him to pass his urine normally per urethra, and be up on the third day and home on the tenth.

Let us deal with the other statements.

First of all, let me give you my series of cases—3 in all in just over 2½ years. This, I think I can fairly claim, comes into the class of 'occasional prostatectomy', performed in the practice of general surgery.

1. Mr S., a Christian, aged 77 years, came into the London Mission Hospital, (C.S.I.) Neyyoor on September 20th, 1951. He had had symptoms of prostatic hypertrophy for several years, with a recent attack of acute retention of urine relieved, until his admission, by repeated catheterisation. His urine showed the presence of pus cells and bacillus coli, and continuous drainage through an indwelling urethral catheter combined with streptomycin gms. ½b.d. cleared his urine of infection within a few days.

The patient had some mental upset after hospitalisation and before operation, although his blood urea was only slightly raised. A Millin's retropubic prostatectomy was performed. The patient stood the operation well. His urine was clear of blood to the naked eye by the evening of the day of operation. His catheter was removed on the 3rd day and he passed urine normally after 8 hours. He went home on the 10th day. His mental upset improved rapidly after his return home.

He is now very well and has put on weight. Except for passing urine twice in the night, his urinary condition is normal.

2. Mr P., a Mohammedan, aged 55 years, was admitted on August 3rd, 1952. He had had symptoms of prostatic hypertrophy for two years, with two attacks of acute retention in the cold season. This time catheterisation had failed to restore 'normal' function.

He was brought by me from the London Mission Boys' Brigade Hospital, Kundara, the largest branch hospital, where he had had his blood urea examined and found to be 80 mgm. A Millin's prostatectomy was performed on August 4th. His catheter was removed on the 3rd day. However, he failed to pass urine and was re-catheterised the same evening and the bladder emptied. He passed urine normally from the next morning.

This patient developed some mental upset following the operation, but had recovered completely within a week. He developed a small stitch abscess and was discharged on the 21st day as he was determined to stay until the wound was 'dry'.

3. Mr R., a Hindu, aged 63 years, was admitted on December 2nd, 1952. He complained of a white discharge for ten years, frequently of micturition 5 to 6 times per night for 6 months, and difficulty in passing urine for 20 days.

When I saw him he was being treated for stricture and had had bougies passed on 5-12-1952. On examination, his prostate was enlarged—the largest bougie passed easily and his urine was full of bacillus coli. Chemotherapy was begun. His blood urea was 52 mgms. A Millin's prostatectomy was performed on 16-12-1952. His catheter was removed on the 3rd day. He passed urine satisfactorily, and went home on the 10th day.

He was seen on 23-4-1953. His condition was satisfactory, although he still has slight frequency.

Two of these cases were of the 'second childhood' variety, and I am sure that the rapid return to more normal circumstances aided considerably in the restoration of their mental faculties.

Now let us look at the instruments and technique used in these operations. I would like to draw your attention to four instruments, but none of them outside the scope of a hospital in which prostatectomy is likely to be performed. First of all, it is much to be preferred to incise the prostatic capsule with a cautery. A diathermy knife is, of course, the first choice and was used in these cases, but, if not available, an electric cautery or some other type should be used, both for incising the capsule and for coagulating bleeding points. Secondly, a self retaining abdominal retractor is valuable for spreading the rectus muscles. It is not essential for it to have a third blade to press on the bladder, although it may be used, if available.

Sometimes retraction on the bladder is not necessary at all, and, if it is, it can equally well be maintained by a bent spatula or by means of a stitch through the outer coats of the bladder wall. Three and four go together. For closing the prostatic capsule it is necessary to have a Mayo's needle and either a Mayo's needle holder or a long handled, strong, needle holder of some sort. A boomerang needle is by no means a necessity. When I did the first Millin's prostatectomy, with the instruments at Neyyoor, I wondered if it would be excessively difficult to close the capsule, but found that with a Mayo's needle and needle holder it can be done quite satisfactorily.

The operation is performed as follows.

Spinal anæsthesia. 3 to 3½ c.c.s of 4 per cent Novocaine made up to 8 c.c.s with cerebro-spinal fluid gives anæsthesia up to the umbilicus

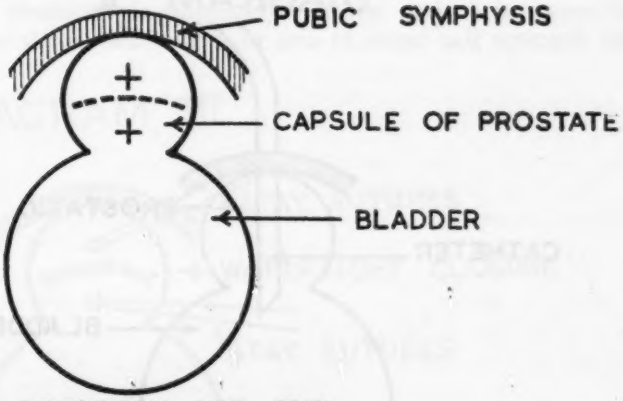
in an average case with usually no serious fall in blood pressure. However, Methedrine should be available to counteract any severe fall in pressure because, quite apart from the patient's general condition, the operator may be led to overlook bleeding points that could easily have been coagulated.

A suitable dose of morphia and gr 1/100 of atropine should be given ¾ to 1 hr., before operation in case any supportive anæsthesia should be necessary, although the operation will usually be concluded within the anæsthetic time of the spinal novocaine. Hyoscine is preferably not given for well known reasons.

A catheter is passed and the bladder emptied.

The surgeon stands to the right side of the patient and makes a mid-line lower abdominal incision 4½″ to 5″ long and extending to within ¼ inch of the symphysis pubis. The fascia is incised and the

DIAGRAM I



+ = THE POSITIONS FOR THE STAY SUTURES.

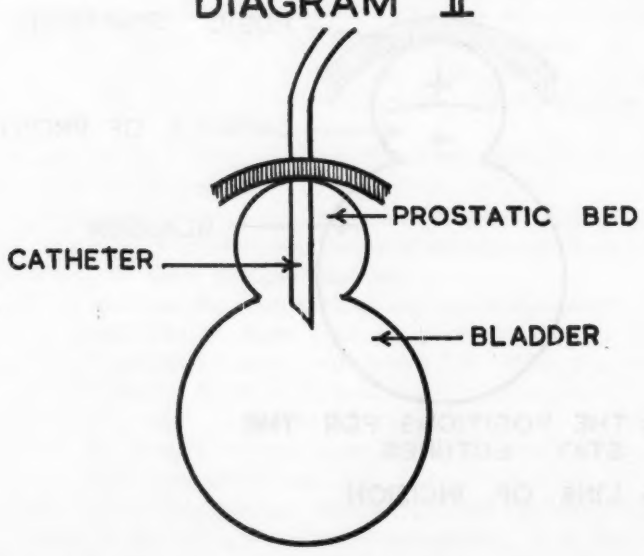
---- = LINE OF INCISION

recti separated in the mid-line. The fingers are passed down into the retropubic space and the tissues gently separated upwards taking the peritoneum and the bladder with them. The patient is put into Trendelenburg position. The prostatic capsule and the neck of the bladder are defined by gently clearing the loose fatty tissue from over them with damp gauze swabs. Any small veins torn in this process are caught in artery forceps and tied. The prostatic capsule is seen as in diagram 1. Now comes what is probably the most difficult part of the operation—the placing of a stay suture in the mid-line distal to the proposed line of transverse incision. (The difficulty is due to the proximity of the pubic bone.) When this has been accomplished a similar one is placed just over half an inch proximally. These sutures take a deep and fairly wide bit of the prostatic capsule and control bleeding from veins of the prostatic capsule including the deep dorsal vein of penis. The ends are left very long and held in artery forceps.

The capsule is now incised transversely mid-way between the two stay sutures, with the diathermy knife, and the incision deepened until the white prostatic fibro-adenoma is seen. If the incision cuts a little way into the adenoma, it is of no consequence. The plane of enucleation is now clearly seen and the tip of the finger is inserted at first anteriorly and the prostate is enucleated. When the prostate is free, except for the urethra anteriorly, the urethra is divided under direct vision with the cautery as close to the gland as possible. Any adherent bits of prostatic capsule that may have torn away with the adenoma and are still holding it are divided at the base with the cautery and the adenomatous mass removed. A clear view of the prostatic bed, or inner surface of the capsule, is now obtained. Any bleeding points are coagulated. Any small adenomata failing to come away with the main mass are removed.

The distal surface of the sphincter at the bladder neck is seen at the upper end of the prostatic bed. A finger is now introduced into the bladder

DIAGRAM II



to ascertain that no stones, diverticulae or other pathology are present. The posterior border or lip of the sphincter is now seized with a forceps and a wedge excised from it with the cautery. The prostatic bed is examined again to see that there are no further bleeding points. A soft rubber catheter is now passed from without inwards through the penis which was cleaned and wrapped in a sterile gauze at the beginning of the operation. The tip of the catheter is cut off obliquely and a side hole cut about ¾ inch from the tip. The catheter tip is placed carefully just inside the bladder and the side hole lies in the prostatic cavity. Accurate placing of the catheter aids materially in the after treatment. The catheter is fixed to the prepuce, or skin at the corona of the glans, with a stitch. (Figure 2).

Finally, the incision in the prostatic capsule is closed accurately with a continuous over and over suture, using the Mayo's needle and

number 1 or 2, 30-day chromicised catgut. (Figure 3) The stay sutures are tied together across the suture line and the ends cut short.

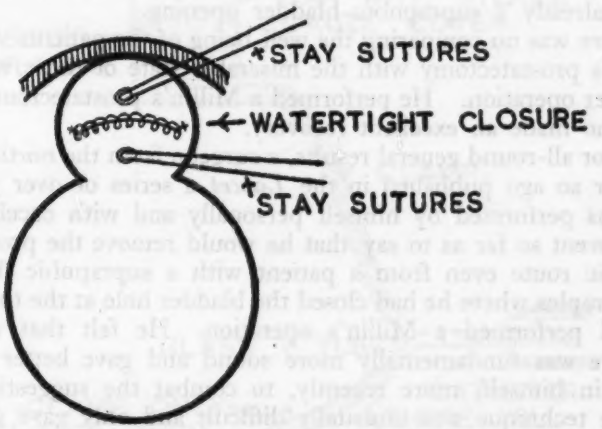
Four ounces of saline may now be run into the bladder through the catheter and the surgeon sees that his suture is water-tight when the saline is squeezed out by pressure on the bladder.

The Cave of Retzius or retropubic space is now well sprinkled with penicillin-sulphamethazine powder. A thin piece of corrugated rubber drain is left reaching down to the incision in the capsule. The patient is returned to the horizontal position and the wound is closed in layers with non-absorbable thread stitches to the subcutaneous tissues. Three or four thread sutures passed round ½ inch of rectus muscle on either side of the midline and tied just tightly enough to oppose the muscles probably help to prevent divarication of the recti. The skin is closed with nylon or clips.

Through a ¼" incision on either side of the scrotum just beyond the external inguinal rings the vasa are seized with artery forceps, divided, and tied to prevent epididymitis.

The after treatment is important. If the patient is co-operative and prepared to drink well, a pint or two of rectal half strength saline

DIAGRAM III



followed by one or two pints of rectal boiled water may be all that is required to maintain a good renal output. If, however, he is not co-operative in this respect, an intravenous infusion for the first 48 hours is invaluable. He should be encouraged to drink a minimum of 100 to 120 ounces of fluid in the 24 hours.

Immediately on return to the ward the patient's catheter is connected up to a Duke's drainage system and allowed to drain continuously into a bottle by the side of the bed. Two hourly bladder washouts with 1/5,000 flavine for the first twelve hours, and thereafter 4 hourly washouts, are instituted. 4 ounces of fluid is run into the bladder and allowed to return several times for each washout. The reservoir-can should be calibrated for this purpose. The nurse must be sure that the whole of the 4 ounces has returned before a further 4 ounces is run into the bladder.

All washings are run into a separate container so that an accurate urinary output chart can be kept.

An alkaline mixture is given and penicillin and/or streptomycin where required. If the patient's chest is a cause of concern he may be got out of bed (with his catheter clipped off) for a short time the day after operation. In any case he will be sat up as early as possible. The retropubic corrugated drain is removed after 24 hours.

The catheter is removed on the third day and the patient encouraged to pass his urine. In the rare event of any suprapubic leakage the catheter is replaced for a further one or two days.

Providing he has not got too far to travel and that he has no urinary infection, the patient may be allowed to go home after the stitches are removed on the 10th day.

Discussion

I was fortunate enough to work for a time in England under a surgeon who did, as part of his general surgical work, a large number of Millin's prostatectomies. They lay in the ward besides patients who had had partial gastrectomy, abdomino-perineal resection of the rectum and appendicectomy. There were at least two or three every week, and I was able to compare them with previous patients who had had the Freyer type of operation and one patient on whom that surgeon did a Freyer as he had already a suprapubic bladder opening.

There was no comparing the well-being of the patients who had had a Millin's prostatectomy with the miserable state of those who had had the Freyer operation. He performed a Millin's prostatectomy on a man of 90 who made an excellent recovery.

As for all-round general results, a surgeon from the north of England a year or so ago published in the *Lancet* a series of over 500 Millin's operations performed by himself personally and with excellent results.

He went so far as to say that he would remove the prostate by the retropubic route even from a patient with a suprapubic drainage and cited examples where he had closed the bladder hole at the time of operation and performed a Millin's operation. He felt that the Millin's procedure was fundamentally more sound and gave better results.

Millin himself, more recently, to combat the suggestion that the operative technique was unusually difficult and only gave good results in his hands, published a large series of cases where the operations had been performed by the registrars and house-surgeons under training at St Peter's Hospital and showing results that compared favourably with his own.

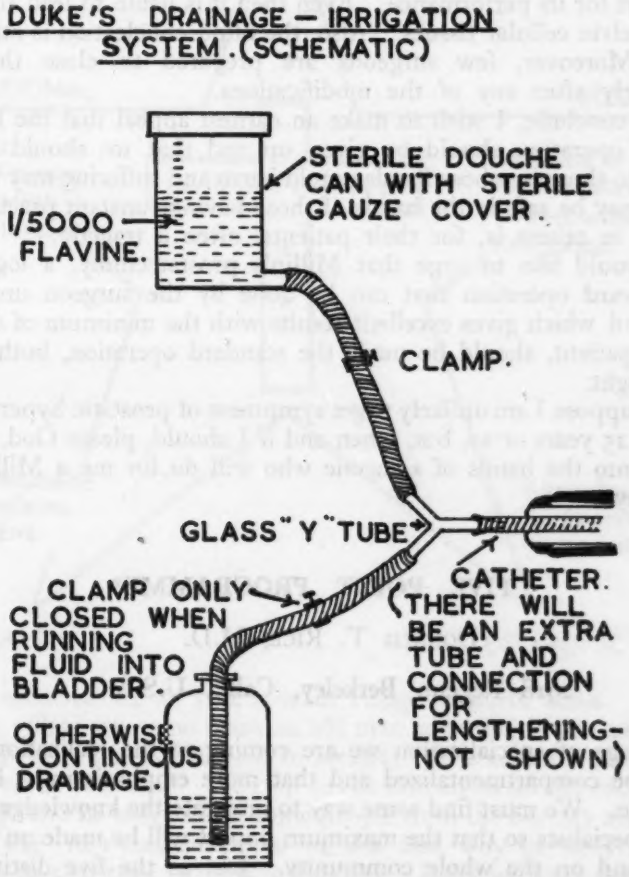
It is significant that those who criticize Millin's operation most strongly are usually those who have never performed the operation themselves, *or*, not understanding the fundamental essentials of the procedure, have made one or two 'bosh shots' at it and branded the operation as no good *or* have seen someone else doing the same thing.

Needless to say many surgeons have, as it were, a vested interest in the Freyer type of operation in some form or other. A skill acquired over the years is not easily discarded. They have nevertheless a duty to others. However, the adept forefinger can still be used to enucleate the prostate in the Millin's operation though, here, with the aid of direct vision.

It seems logical that the general surgeon when removing the prostate, instead of having to rely on a specialized sense of touch and an ability which he may never have sufficient practice to acquire, should be able, as in Millin's prostatectomy, to work under direct vision, using faculties that he has trained and is constantly using.

I have seen some of this blind surgery in the hands of otherwise competent surgeons. I have seen the blood welling out of the bladder while the operator struggled to free with his fingers a gland more fixed than usual, or applying the scissors blindly, re-doubling the bleeding.

I have watched a patient with a pulse of 170, collapsed and with his bladder full of blood clot, while an eminent surgeon but with relatively little experience of prostatic surgery re-plugged his prostatic cavity and bladder with gauzes. I have seen a patient passing urine through his rectum and in hospital for near on two months following this suprapubic


DUKE'S DRAINAGE — IRRIGATION SYSTEM. (SCHEMATIC)
STERILE DOUCHE CAN WITH STERILE GAUZE COVER.
1/5000 FLAVINE.
CLAMP.
GLASS "Y" TUBE
CATHETER.
CLAMP ONLY CLOSED WHEN RUNNING FLUID INTO BLADDER.
OTHERWISE CONTINUOUS DRAINAGE.
(THERE WILL BE AN EXTRA TUBE AND CONNECTION FOR LENGTHENING— NOT SHOWN)

type of prostatectomy performed by an otherwise competent surgeon —and all this quite apart from the usual discomfort to the patient mentioned earlier on.

Kenneth Walker, editor of Thompson-Walker's *Genito-urinary*

Surgery, talking of the suprapubic per-vesical operation, says, 'It has however the following inherent disadvantages:

1. That the method of controlling haemorrhage is unreliable.
2. That infection is a frequent complication.
3. That post operative obstruction at the bladder outlet occurs in certain cases.
4. That convalescence is long and tedious, and liable to be rendered difficult by many complications.

To try and overcome these disadvantages certain modifications have been made mainly by using a larger hole in the bladder and attempting to *see* the prostatic bed. However, what is accomplished easily by Millin's retropubic approach is quite another matter through the bladder, and the Harris type of operation, which endeavours to give direct vision of the prostatic bed and obliterate the dead space by sutures, is an operation which, in truth, requires special retractors and other instruments and an expert for its performance. Even then it is liable to lead to infection of the pelvic cellular tissues. Also, the blind enucleation is still the first stage. Moreover, few surgeons are prepared to close the bladder completely after any of the modifications.

To conclude, I wish to make an earnest appeal that the blind enucleation operation should be given up and that we should no longer teach it to those in whose hands untold harm and suffering may be caused.

It may be safe in the hands of those having constant practice, but to teach it to others is, for their patients, often a tragedy.

I would like to urge that Millin's prostatectomy, a logical, safe, straightward operation that can be done by the surgeon under direct vision and which gives excellent results with the minimum of discomfort for the patient, should be made the standard operation, both practised and taught.

I suppose I am unlikely to get symptoms of prostatic hypertrophy for another 25 years or so, but, when and if I should, please God, I can put myself into the hands of someone who will do for me a Millin's prostatectomy.

FIVE POINT PROGRAMME*

DONALD T. RICE, M.D.

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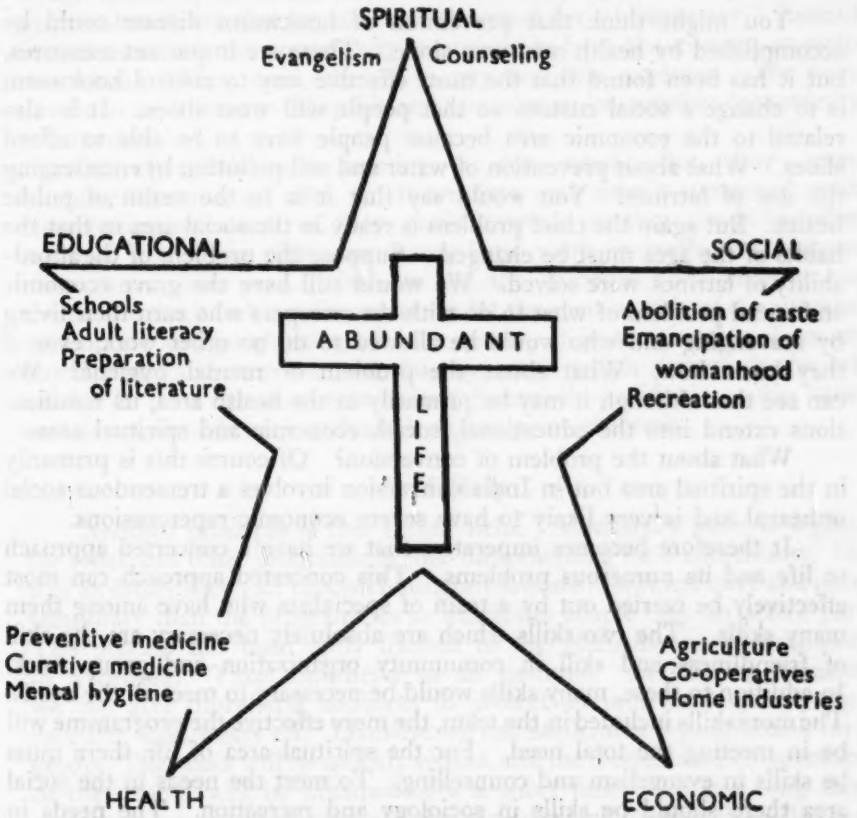
IN this age of specialization we are coming to the realization that life cannot be compartmentalized and that more emphasis must be put on the whole. We must find some way to integrate the knowledge and skills of our specialists so that the maximum impact will be made on the whole person and on the whole community. Just as the five distinct points of the star are integral parts of the whole star, we can define five separate areas of life which merge into the whole of life. A little thought will

* The author spent 5½ years at Damoh, M.P., under the United Christian Missionary Society.

make it plain that there are numerous and intimate relationships between all these areas. And yet we in missionary work are often guilty of focusing our attention and efforts on one area to the exclusion of all others. Perhaps someone in another department is dealing with another area, but there is little or no co-ordination of effort. Miracles have been accomplished through our past semi-co-ordinated efforts, but for fullest efficiency we must work out a truly integrated approach to life as a whole.

As an example of the uselessness and waste of some of the fragmentary programmes that are carried on by governments, missions and other phi-



lanthropic agencies, let us visit a small village in north India. At the edge of the village we come upon an old man squatting in the sun. He is too old to work but not too old to scratch. It is obvious that he has scabies, or seven year itch. We stop to ask him about all the excitement in the village and he tells us that some people from the big city are giving khujli ki diwai—itch medicine. So we ask him why he does not go, and he tells us that they won't give him any. Later we learn that it is a scabies control programme sponsored by UNICEF, The United Nations agency for children's welfare, and that they have been authorized to treat only women and children. Just as we turn to go, the old man's daughter-in-law and grandson return from the dispensary, liberally daubed with itch medicine. The woman returns to her household duties, leaving the baby in the care of the old man. There, as soon as the medicine wears off, he is sure to be re-infected.

Can this programme which is aimed solely at women and children be effective? The obvious answer is no. Can a programme which is aimed at a particular disease be effective in improving life in general? Let us say yes, to a certain extent. But how much better it would be if an attack were made on all diseases that were present! Can a programme which is aimed at one area of life be effective? Yes, but much of its effectiveness is lost because all areas are closely related. Needs are only partially and temporarily met.

Inter-related Areas

You might think that prevention of hookworm disease could be accomplished by health measures alone. These are important measures, but it has been found that the most effective way to control hookworm is to change a social custom so that people will wear shoes. It is also related to the economic area because people have to be able to afford shoes. What about prevention of water and soil pollution by encouraging the use of latrines? You would say that it is in the realm of public health. But again the chief problem is really in the social area in that the habits of the ages must be changed. Suppose the problem of the affordability of latrines were solved. We would still have the grave economic and social problem of what to do with the sweepers who earn their living by scavenging and who would be allowed to do no other work, even if they knew how. What about the problem of mental hygiene? We can see that although it may be primarily in the health area, its ramifications extend into the educational, social, economic and spiritual areas.

What about the problem of conversion? Of course this is primarily in the spiritual area but in India conversion involves a tremendous social upheaval and is very likely to have severe economic repercussions.

It therefore becomes imperative that we have a concerted approach to life and its numerous problems. This concerted approach can most effectively be carried out by a team of specialists who have among them many skills. The two skills which are absolutely necessary are the skill of friendliness and skill in community organization and group work. In addition to these, many skills would be necessary to meet all the needs. The more skills included in the team, the more effective the programme will be in meeting the total need. For the spiritual area of life there must be skills in evangelism and counselling. To meet the needs in the social area there should be skills in sociology and recreation. The needs in the educational area require skills in regular school work and in adult literacy. The economic area of life requires a multitude of skills, but probably the most important would be those of agriculture, home industries and co-operatives. For the health area skills in curative and preventive medicine are necessary.

Felt Need

One of the principles by which the team should work is that of concentrating on a felt need. In missionary work we have too often been like the group of scouts that went out to do their good deed for the day. When they reassembled the scout master noticed that one had a scratch on his face, another had a skinned shin, another had a torn shirt. On enquiry he learned that the bunch of them had been trying to help an

old lady cross the street. The explanation finally came when the newest member of the troop blurted out, 'But she didn't want to go.'

About three miles out of Damoh there is a small village called Marutal in which our mission used to maintain a preacher-teacher. Four years ago it was found necessary to replace the man there. It was decided that the school be abandoned and that the new evangelist spend his full time preaching. This man's wife was a nurse and I thought some of setting up a dispensary in the village. One evening our family went out to investigate the possibilities. As we walked through the lanes of the village to survey the needs and interest of the people in health, we were surprised to learn that no one saw the need for a dispensary. Instead several men took the opportunity to urge us to have the mission re-open the school. They even offered to pay half the expenses. We were unable to meet the need they felt and our mission lost another opportunity for service.

Our hospitals are meeting a felt need. But they seem to have become an end in themselves and aren't concerned with contributing as much as they could toward meeting needs in other areas of life. Too often our evangelistic work is ineffective because there is no felt need. Yes, we see the spiritual need clearly, but the people don't feel it. Our sermons hit the slanting side of the spiritual area of life and go glancing off into space. It is questionable if we are morally justified in continuing this approach which disregards the felt need. It is a certainty that is not financially justifiable. We must search out the felt need and use it as our point of attack.

Self Help

Another principle is that of self help. Admittedly there is a place for relief and other programmes that do something for a community, but it is an established fact that such programmes are more expensive and more temporary than the programmes in which the people take an active part. The process has been aptly likened to the phenomenon of immunity to a disease. Take diphtheria as an example. In case of necessity we can give diphtheria antitoxin to protect an individual quickly, but its effect soon wears off. Likewise we can implement a programme for a group. The effect will be quickly visible, and the interest and co-operation of the people will be obtained—for a short time. To give long term protection against diphtheria we give toxoid which enables the individual to build up his own immunity that will last for many years. Likewise if a group of people can be helped to implement their own programme, their interest and co-operation can be sustained over a long period and the effects will be enduring.

Team Work

You are probably saying by now that this all sounds very well on paper, but how would you go about using such a team. My answer is that there cannot be any fixed programme, but that constant evaluation and revision would be necessary. However, I think that we should start working in many villages around a centre in more or less standard ways. That is, we would work at spreading information on health, agriculture, home

industry, literacy, etc. However, we would constantly be on the watch for a felt need, perhaps in an individual, but preferably in a group. Then that group would be organized and help given to meet the felt need. The group would then have had experience in tackling a problem and would derive power from solving it. In the meantime the team would have the opportunity to stimulate or elicit other felt needs, using that working group as a focus for activity. They could then be led to attack needs in other areas, using the help of other specialists. Eventually the group would see the need in the spiritual area of life and the meeting of that need would bring about the turning of the group to Christ. And yet this is not the final objective. We should work toward the permeation of the spirit and teaching of Christ into all areas of life so that an awareness of the stewardship of time, talents and possessions becomes the focus of everyday living.

Taking Marutal, the village mentioned earlier, as an example, let us imagine what might have developed out of the situation that we found there had we been properly skilled to deal with the problem. We would have gathered the people who were interested in having a school. While working with them on the school project we could unobtrusively lead them to see other needs. Health needs might be the next point of attack. The fifth, tenth, or perhaps the twentieth project might be in the spiritual area with an opportunity to work directly for conversion. It would necessitate a long term effort, but I feel assured that the end result would be much more satisfactory than the result of the long term effort we have been exerting directly at the spiritual need which the villagers themselves have not felt.

Similar programmes could be going on in several villages at the same time, perhaps starting with different needs and proceeding at different speeds, but being led toward the same objective. Furthermore, it is likely that improvements and successes in one village would serve to stimulate and encourage others, and something in the nature of a chain reaction would get started. This has been the experience of community action in U.S.A.

Community Action

There are some good examples of community action in India too. Faridabad, a refugee town, was constructed by the refugees themselves under the leadership of an inspired Hindu. Storekeepers and business men who had never known manual labour worked together for the common good. We witnessed another example, not so spectacular, but certainly as inspiring. About 28 miles from Damoh we found a row of boys sitting behind a row of flat, but not smooth, stones. They had slates and primers and a man was teaching them the three R's. Nearby was a frame structure that would soon be thatched to provide shelter for the school during the rains. The Indian national flag was proudly flying from a crude flagstaff. We stopped to see what it was all about. The people of that village had felt the need that their sons know how to read and write. They had pooled their resources. Some had brought the huge stones from the river five miles away. Others had cut the poles for the building and erected the structure. Others were contributing to the teacher's salary of $ 5 a month. Thus this Hindu community had taken action to meet its felt need.

New Life

The action of this village exemplifies the spirit of new India. The people are beginning to feel needs they have never before known, and they are willing to do something about it. A little skilled help to these struggling groups will enable them to make great strides in the alleviation of the ills that are present in all areas of life. Such opportunities are all around us. But to grasp these new opportunities we must discard some of our old ways and strike boldly forward with new methods.

The Star of Life can lead us on to a new era in our Mission. With this new approach we can use new opportunities to help the village people of India find a new life in Christ.

LEPROMA PRESENTING AS CARCINOMA OF THE PENIS

By E. J. Currant, M.A., M.B., B. Chir and A. L. Furniss, M.A., M.B., B. Chir

(Victoria Leprosy Hospital, Dichpalli)

Lepromatous leprosy may involve almost the whole or any part of the skin, and a leproma nodule may thus be expected to appear anywhere, although certain sites are more commonly affected than others. In describing, therefore, a leproma of the prepuce it is not the intention to record an unusual or unexpected occurrence, but simply to draw attention to such a possibility in the differential diagnosis of such a lesion on the penis.

The patient, a Hindu of about 40 years of age, had been suffering from lepromatous leprosy for about 15 years. The lesions were mainly of the diffuse type, and nodules were not obvious, although a few were present on the buttocks. Such a case of diffuse lepromatous leprosy might indeed present at a general hospital with some other presenting symptom, and the real nature of the condition be unrecognised.

This patient complained of an ulcer on the prepuce, which he said he had noticed for about a month, but which had probably been present for longer. It was not particularly painful.

On examination a circular indurated ulcer, 1 cm. in diameter, exuding a little seropurulent material was seen on the ventral lip of the inner surface of the prepuce near the orifice. The edges of the ulcer were slightly raised and everted; dark-ground microscopical examination was not possible, but the lesion did not respond to anti-syphilitic therapy. There was no obstruction to urinary flow, but complete retraction of the prepuce was not possible. Firm, enlarged inguinal lymph glands were felt on both sides. As this was a known case of lepromatous leprosy it was considered that the lesion on the penis might be a leproma and the glandular enlargement that which occurs in lepromatous leprosy, but nevertheless it was considered that the lesion very closely resembled an early carcinoma.

A circumcision was performed and the lesion was excised entire for biopsy. The specimen, fixed in Zenker's fluid and embedded in paraffin,

was sectioned. Microscopical examination showed the typical granuloma of leprosy, with numerous foamy lepra cells and very numerous acid-fast bacilli throughout the lesion. There was no evidence of any neoplastic process.

Discussion

Many authors have described involvement of the penis in leprosy. Klingmüller (2) quotes a series of authors who describe involvement of the penis as occurring in 20-30 per cent of lepromatous cases. Gluck is quoted as writing of the differential diagnosis from syphilis; he states that the leproma is not so hard and has no inflammatory halo. He also states that these lepromata on the penis may occur early in the disease and may ulcerate. Sloan (3) describes a case of urinary obstruction from a leprous phimosis; he also describes circumcisions performed on six other lepromatous cases and, of these, three had nodules, and two others, though without nodules, contained numerous acid-fast bacilli. In our experience the scrotum is more frequently and more strikingly involved in lepromatous leprosy than the penis, and we have not seen any other case necessitating circumcision.

Klingmüller (2) quotes Leloir, who described two cases of sarcomatosis of the skin which closely resembled nodular leprosy, and refers to possible confusion with melanotic sarcoma. One of us (A.L.F.) (1) has described a case of a leproma in the female breast which presented as carcinoma. However, no author seems to have written of confusion with a carcinoma of the penis, although it is clear that the penis may be involved in lepromatous leprosy.

We feel that it is worth while to draw attention to the fact that, in the diagnosis of an isolated tumour or ulcer, a leproma must be considered as a possibility.

Summary

A case is described in which a solitary leproma on the prepuce presented as carcinoma.

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THE L-C TREATMENT OF VENOMOUS BITES OR STINGS*

HERBERT L. STAHNKE

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State College, Tempe, Arizona

THE so-called 'cut-and-suction' treatment when used on venomous stings is not very effective. This fact we learned at an early date in our experiences with poisoning caused by the two lethal scorpions of the Southwest, i.e., Centruroides sculpturatus Ewing and C. Gertschi Stahnke. During a twenty year period in Arizona, these two animals were responsible for more than twice as many deaths as all other venomous animals put together, including rattlesnakes, black widow spiders, Gila monsters, and venomous insects (Stahnke, 1949). In our first observations on the effect of rattlesnake venom, we were shocked at the suffering that patients had to undergo even though the best known treatments were administered. Out of these experiences grew the treatment now known as the L-C method, i.e., ligature and cryotherapy—cold treatment.

In treating a patient for venom poisoning two forces must be taken into consideration, the chemical effect of the toxin on the animal tissue and the bacterial action of bacteria possibly introduced by the bite or sting. If both of these are introduced in small enough quantities, the natural defensive forces of the body can neutralize their effects. The L-C method takes into account the above principle.

The L-C Treatment

Let us assume that a person is stung or bitten by a venomous animal on one of the extremities, e.g., the tip of the index finger. Serious consequences may be averted by doing the following:

1. Place a ligature (a tight tourniquet) at once between the site of the bite or sting and the body, but as near the point of entrance of the venom as possible. A heavy piece of string or shoe-lace will serve very well as a ligature. A handkerchief, bandage, or necktie is not very suitable but will be better than nothing. The ligature can be effected by wrapping the string three or four times around the finger and then twisting it tightly, to the point of pain, by means of a small stick, nail, or other suitable object. Do not make any incisions at the site of the bite or sting. This is unnecessary and is only inviting more difficulties.

2. Now place a piece of ice on the site while preparing a suitable vessel of crushed ice and water.

3. Place the entire hand in the iced water prepared. In general, immerse the member bitten or stung in the iced water well beyond the location of the ligature.

4. After the hand, or other member, has been in the iced water for five minutes the ligature must be removed, but the hand is kept in the iced water for at least two hours. If the attacking animal was one of the two lethal scorpions, no serious effects will be experienced after this time. For the Gila monster, six to seven hours was found necessary. For rattlesnakes or other pit-vipers, the time element will depend upon

* Reproduced from American *Journal of Tropical Medicine and Hygiene*, January, 1953, by the Christian Medical Council for Overseas Work, 156 Fifth Ave., N.Y.

the size of the attacking animal. At least six hours will be necessary in order to prevent serious destruction of tissue. For a large rattlesnake the patient may have to be treated for 14 to 20 hours. During this time it is imperative that the patient be kept warm so that circulation through all parts of the body except the poisoned member be good. If the individual is bitten on an area other than the extremities, a large icepack of finely divided ice may be used. If ethyl chloride is available, the temperature of the involved tissue can be reduced more quickly. An area of approximately three inches around and including the site of the bite or sting can be sprayed, taking care not to freeze the tissue. This can be accomplished by spraying only to the point of frost formation. After this has disappeared, the process should be repeated. When the area has become thoroughly chilled, it can be held in that condition with an ice-pack. In case of snake poisoning, where the swelling has advanced beyond the site of the bite, the appendage should be immersed in the iced water, or packed in crushed ice, well above the area of swelling.

In using cryotherapy, the initial pain experienced during the first five minutes must not be confused with the action of the venom. Likewise, there is no danger of frost bite where iced water with nothing added is used. When going into wide country, the camper, hunter, or scientist can carry several metal tubes of ethyl chloride to be used in lieu of ice. If the procedure outlined above is used, one tube can be made to last about thirty minutes. Thus two tubes, under normal conditions, would give sufficient time to get to ice and/or a physician (Stahnke, 1949 a).

Benefits of the L-C Method

Venom action is chemical action. For every 10°C. rise in temperature, chemical activity is doubled; the converse is likewise true. A hand kept in iced water will have its temperature dropped from the normal body temperature of 37°C. to about 4-7°C. Consequently, the chemical activity at the site of injection is practically nil.

The chemical action of venom in the body becomes harmful only when the natural defenses of the body are overwhelmed. The ligature holds the venom at the site of injection until the temperature of that region can be dropped. This lowered temperature causes the tissues to contract and the capillaries and arterioles to constrict. Thus the venom is so held that it will enter the body very slowly and will be distributed throughout the body in an extremely dilute condition—too dilute to cause untoward effects.

Harmful bacteria are introduced with bite of rattlesnakes and other biting venomous animals. In the presence of the venom and the normal body temperature these organisms thrive. When the body temperature is reduced by approximately 30°C., these organisms cannot multiply.

In addition to the above, we also have the benefit of the anæsthetic action of the cold and the providing of ample time to administer antitoxin where such is available. However, death can be prevented with the L-C treatment alone if sufficient time is given for its use.

TETANUS—A CASE REPORT

H. E. DESTER

Sewa Bhawan Hospital, Jagdeeshpur, Via Raipur, M. Pradesh.

ON 11-12-1952 Jaswantin, a village woman aged 24 years, entered the hospital with the following symptoms:

Difficult labour 14 days previous, in her village.

Three days previous to admission patient began having difficulty in swallowing and speaking.

Upon admission she was unable to speak or swallow, and had very painful convulsion and rather generalized rigidity of the muscles.

Upon admission she received tetanus antitoxin 6,000 units, 600,000 units of penicillin the first day, morphine gr. 1/6 hypo., and magnesium sulphate 2 c.c. of 50 per cent solution, three doses at four-hourly intervals.

The medication did not relax her much, but with difficulty a nasal catheter was passed. Through this phenobarbital sodium, saline solution with glucose, and alkalies were given; also milk.

Four hours after admission 4,500 units of tetanus antitoxin (Int. U.) were given i.v.

About 20 hours after admission 16 c.c. of spinal fluid was removed and this replaced with 14 c.c. of normal saline and 3,000 units of tetanus antitoxin. Almost immediately the painful convulsions and spasms ceased. She was greatly relieved and relaxed. The next day, about 24 hours later, the spasms recurred and the withdrawal of spinal fluid was repeated and normal saline without tetanus antitoxin was injected into the spinal canal. This again resulted in relief from spasms and pain. These did not recur. She made an uneventful recovery.

Several years ago there was an abstract in the Journal of the American Medical Association reporting five cases of tetanus successfully treated by this method. In this abstract they advocated removing 20 c.c. of spinal fluid. We were unable to withdraw that much.

We realize that the tetanus antitoxin that was given probably did not affect the course of the disease. It sometimes happens here, ninety miles from a shopping centre, that we are caught without sufficient tetanus antitoxin to treat such a case.

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EDITORIAL

GIVING a safe and effective anæsthetic is one of the major requirements in any hospital. We, therefore, particularly welcome the two papers on anæthesia appearing in this issue.

Unfortunately, proper attention is not always given to make provision on the staff for a person with adequate training in anæsthesiology. This is particularly true in some of our smaller hospitals. A proper anæsthetist is not a luxury, but a necessity.

Your attention is invited to the valuable material sent out periodically by Dr Douglas Forman, Secretary, Christian Medical Council for Overseas Work, 156 Fifth Ave., New York 10, N.Y., U.S.A. For further particulars please write to Dr Forman at the above address.

H. H. G.

MEDITATION

In speaking on 'The Disciplines Essential to Our Vocation', Dr F. Eppling Reinartz gives a short catalogue of disciplines that are essential.

1. The discipline of *acceptance*

We must learn to accept ourselves and our situation.

Martin Luther's fable of the mountain goats illustrates the wisdom of *yielding*.

2. The discipline of *settling down*

'So live in every place where you sojourn as though you meant to spend your whole life there, never missing an opportunity to speak a true word, to do a kind act or to make a friend'.

3. The discipline of *forgiveness*

Broken and unrestored relationships are one of the most serious destroyers of efficiency.

4. The discipline of *appreciation*

Our vocation calls us to be person-minded. 'Honest effort at any level of excellence deserves our appreciation'.

There are few more creative attitudes than that of spontaneous and sincere approval.

5. The discipline of *orderliness*

'Peace is the child of order'—St Augustine

But beware of making system an end in itself.

'Jesus saw faces'. The human value always comes first.

6. The discipline of *sifting*

'The essence of genius is knowing what to overlook'.

WM. JAMES

7. The discipline of *direct action*

Let us not be so insistent on status and approved procedures that we stunt or destroy all initiative.

'The deepest spring of action is the sight of action in another'.

8. The discipline of *repose*

Read repeatedly John Greenleaf Whittier's 'The Eternal Goodness' from which the hymn 'Dear Lord and Father of Mankind' is the singing heart. 'Take from our souls the strain and stress, and let our *ordered* lives confess the beauty of Thy peace'.

9. The Discipline of *promptness*

Beware of promising more than you can reasonably expect to produce.

This discipline is closely related to the discipline of sifting.

Get at the *main* tasks! Don't give yourself a plausible excuse for failure to attack the bigger assignments by using up time and energy on the much less important ones.

10. The discipline of *hope*

How dramatically and unexpectedly God's providences frequently sweep into life righting in a moment what has thwarted and wronged us.

'Hope thou in god!'

Letter to the Editor

DEAR SIR,

While on a recent visit to our largest branch hospital at Kundara I was asked to see a patient who had been ill for several days and was suspected of having an appendix abscess. Certainly on examination the patient, a small woman with a relatively lax abdominal wall, had a rounded tender lump in the right iliac fossa. During the palpation the lump suddenly disappeared from the R.I.F., and appeared as a sausage shaped tumour lying across the abdomen just above the umbilicus. Gentle pressure on the tumour towards the right resulted in the tumour taking up its original position and shape in the R.I.F.

I have never read of an abdominal tumour that changes its position and shape spontaneously and is reducible to its original shape and position by antiperistaltic pressure along the line of the colon as being diagnostic (or may we say, pathognomonic) of intussusception.

Here in India, where intussusception in adults is common, have our readers seen this phenomenon frequently?

Sure enough at operation the condition proved to be an intussusception of the 'caput caeci' variety.

Yours faithfully,

(*Sd*) DEREK G. JENKINS, M.B., B.S.,
M.R.C.S., London Mission Hospital,
Neyyoor, Travancore.

8-8-53

ASSOCIATION NOTES

Acknowledgements

THE Secretary wishes to thank all the members who were present at the Special Meeting of the Association held at Vellore on August 29th and those 430 members out of a possible 700 who sent proxies properly filled out and in time to be exercised at the Meeting. The Minutes will be included with those of the Nagpur Conference, probably in the January Journal.

He also wishes to express his appreciation at the response from Hospitals, Dispensaries, Sanatoria and Leprosy Institutions as well as from private members to the annual appeal for donations to the C.M.A. So far the response is the best ever. There will be no deficit this year provided funds are forthcoming from abroad in the usual volume. The list of hospitals contributing will be published as usual in the January 1954 Journal.

Finally he wishes to express his deep gratitude of all the kind hospitality afforded to him during the last 6 years in his visits, for the counsel and advice, for the personal support and above all for the prayers of the Members for him.

He will be handing over the Secretaryship on December 1st, 1953 to Dr (Miss) C. P. Thomson and sailing from Bombay on December 10. After a few weeks in the United Kingdom he sails about the 18th of January for the U.S.A.

Welcome

The Association extends a cordial welcome to Dr Claire P. Thomson as she takes over the Secretaryship of the C.M.A. for the period of Dr Wilder's furlough. Dr Thomson is known to many of us as the author of the Jet Series on 'Roundworm' and the 'Treatment of Sore Eyes'. She is also the author of the booklet *Better Health*, the Hindi and Tamil editions of which will soon be off the Press.

Born in the last decade of the 19th century, Dr Thomson early lost both parents. Joining St Andrew's she transferred to Glasgow in order to take social studies while reading for her M.A. Later she trained as an almoner at King's College Hospital and subsequently served in this capacity at the Norfolk and Norwich hospital and at Great Ormond Street. Meanwhile she was taking courses in psychology leading to her diploma followed by medicine at King's and at Manchester; she took her M.R.C.S. and L.R.C.P., at the age of 42.

With the exception of one year in which she relieved Dr Violet Quilley of Ahmednagar, her service has been in the Hospital of the Epiphany at Kamdara, an extremely malarious place, and St Denys Hospital at Itki in Ranchi District. The integration of the Hospital in the life of the Church at Itki has been largely due to Dr Thomson's influence.

Uttar Pradesh Medical Conference

A Conference of the Uttar Pradesh branch of the C.M.A. was held at Bareilly at the Clara Swain Hospital on September 4th and 5th. Dr Charles V. Perrill was elected Chairman of the Conference.

The opening Devotional Services on the two days were led by Rev. D. S. Chowdhury, District Superintendent of Bareilly.

The Chairman presented a paper on 'The Place of the Healing Ministry in the Life of the Church' and Rev. Stewart Meecham, a guest speaker, spoke on 'The Personal Relationship in Mission Hospitals'. Dr Ram Dutt's paper on 'Religious Work in Mission Hospitals' was read by Rev. D. S. Chowdhury, and Dr Nevile Everard's on 'Christian Medical Service in Rural India' by Sister Dorothy Atkins of Kachhwa. Dr. Robert Peterson of Bareilly spoke on the 'Care of the Teeth'.

Visits were made to the Bareilly Crematorium and to the Tuberculosis Department of the Clara Swain Hospital where Dr J. M. Pomeroy demonstrated the work of the Chest Unit.

Dr G. L. Downie of the Community Hospital, Landour was elected to the U.P. Executive Committee of the C.M.A. in place of Dr J. B. Wyon, transferred to the Punjab. The Conference passed the following resolutions:

I. *Christian Staff in Mission Hospitals and Dispensaries:* It was resolved, that Christian Medical Institutions can only function in their Christian Ministry by maintaining a predominantly Christian Staff. If it becomes necessary we would agree to advertise vacant posts in our Government Aided Institutions, but, on condition that the Institution concerned has the right to choose the persons considered suitable for the appointment.

II. *Future Policy of Expansion and Contraction:* We realize that Christian Medical Institutions are inadequate in number, finances and personnel. We recommend that present resources be better used through, (i) Active co-operation among Medical Institutions, (ii) By using better business methods. It is recommended that Christian Hospitals should do charitable work to their maximum capacity on sound basis.

In expanding medical work we should be on our guard against establishing institutions of a size or type incompatible with the indigenous resources for maintaining them.

III. *Medical Work in Rural Areas:* Whereas 78 per cent of India's population lives in villages and most diseases among them are preventable but little is being done to relieve this situation. Be it resolved that the church and the Christian hospitals extend medical and public health services into the villages. In view of the shortage of personnel non-medical persons may help to initiate part of this programme.

IV. *Tuberculosis Sanatoriums:* (1) It is recommended that in view of the increasing incidence of Tuberculosis our Mission Hospitals should set aside a few beds for T.B. patients and arrange for their proper treatment and that anti-T.B. work should be organized through a mobile unit attached to a central T.B. unit. The units may be arranged so that they are in close proximity to the Central Unit.

V. *Almora Sanatorium:* In view of the fact that it has not been possible to staff and finance a proper programme for the Almora Sanatorium, it is moved that this Institution, preferably to closing down permanently, be offered to Government to operate as a Sanatorium provided reasonable adjustment can be made concerning buildings and equipment.

VI. *Medical Practice by Non-Medical Persons:* In our judgment no church or mission should ever agree to non-medically trained workers advertising themselves as doctors by using assumed and bogus degrees nor should they be permitted to supplement their income by the sale of medicines. However, in view of the tremendous existing medical needs, workers may well assist qualified doctors by dispensing simple medicines and administering first aid. To serve this need they should be given an adequate training at carefully planned institutes under medical guidance. They could also be instructed in the application of psychological methods in counselling and how to work co-operatively with other professional groups in alleviating human suffering.

VII. *Christian Personnel and their Relationship in Mission Medical Institutions:*

Resolved that in order to effect an efficient service it is essential to have the following requirements:

1. Consecrated personnel.
2. The personnel should have security of service.
3. There should be a welfare scheme like health insurance, old age pensions or provident fund.
4. Cordial and friendly relation among the staff.

VIII. *Psychiatric Clinics:* The Conference is pleased to note the progress made by the Psychiatric Clinic run by Dr D. Norell in Lucknow and expressed its appreciation of the useful work done by this Clinic, and it is also pleased to note the appointment of Dr Rajan on the staff of the Clinic. The Conference recommends that the Project of the new programme of the diagnosis and treatment of the mental cases according to the scientific Christian and psychiatric principles be further discussed by the U.P.C.C. and the C.M.A.I. with a view to approaching Dr Norell and her sponsers and enlisting their aid in developing this type of service among our Medical Institutions in the U.P. on an individual and co-operative basis.

IX. *Religious Work in Mission Hospitals:*

1. *Hospital Chaplain:* A Hospital Chaplain is to be a member of the Hospital staff, he is responsible under the Hospital Superintendent, for the pastoral care of the patients. He will visit and keep a record of each patient; he will arrange for the worship services for the patients, and recreations for patients. He will educate lay workers of the Church (including hospital staff) in lay pastoral work and supervise and direct this lay pastoral work. He will arrange for the followup of patients after discharge.

   It is also recommended that where possible the Chaplain be an assistant or associate pastor of the local Church. As such he would have much of the pastoral responsibility for the hospital staff. He will probably conduct Bible Study Classes for patients, hospital staff and hospital students.

2. *Syllabus for Training Theological Students in Pastoral Clinic:* The Conference does not feel able adequately to discuss a Syllabus for studies by theological students. It does feel that studies in counselling and pastoral work should be required of every theological student, and that the course should include visits to jails, mental hospitals, civil and other local hospitals, and receiving of some instructions. The required curriculum for Theological students should also include a short course in psychology and development of personality.

The special course in counselling and pastoral care, required of all students, would include Principles and Methods of Pastoral Counselling, Social Case Work and Interview Techniques (III) Christian resources (IV) Clinical Pastoral Training (V) Preaching and Practical Task and Psychological factors in Evangelism (VI) and Premarital, Marital and Family Counselling (VII) In addition to the required subjects listed above, an elective course in counselling and Pastoral care, open only to those having had Psychology, should include approximately the full list of subjects given in the Syllabus presented to the Conference.

This Conference also recommends that all theological students be required to pass First Aid and Home Nursing examinations.

SECRETARIAL NOTES

Vellore

August 23-September 9. Left by Grand Trunk on the evening of the 22nd making good connections in Madras and arriving in Vellore at 9 p.m., on the 23rd. Put up with the Carmans for a day and a half then shifted to the guest room in the Gault's apartment in the new Men's Hostel. Busy with a routine physical, conferences with Dr Lazarus on the Association affairs, with Dr Paterson on training of ancillary services, with Dr Gault and Rev. R. M. Barton on Laboratory Training, with Miss E. M. James on pharmacy problems and with the physiotherapists and Dr Paul Brand about the possibility of training in physiotherapy. Much time spent in preparation for the special meeting of the Association on the 29th and the Conference on Hospital Evangelism, September 5-7.

Vellore Council Meeting, August 28. The usual one day annual meeting of the Council with its well prepared and expeditiously managed business. In the past there has been some criticism that the Council merely rubber stamped the actions of the Executive. This time, however, there was keen discussion of some points and reconsideration or amendments of such action.

Meeting of the Christian Medical Association August 29. Two hours the previous evening spent with Drs J. C. David and H. H. Gass checking the membership rolls and the 400 odd proxies submitted. The stated time for the meeting the next morning found less than half of the quorum necessary but 25 minutes later transport from the hospital brought the required quorum and the first step in changing the name of the Association to the 'Christian Medical Association of India' was completed in fifteen minutes.

Conference on Hospital Evangelism, September, 5-7. Delegates began to arrive on the morning of the 4th and the roll of registered delegates was nearly filled by midnight. In all, forty three delegates registered. To the United Lutherans must go the banner for the largest delegation; that church sent six delegates and a seventh came on his own. Andhra had the highest representation among the states which included U.P., M.P., Bombay, Andhra, Madras, Mysore and Travancore. One of the criticisms of the Conference was the small number of medical and nursing delegates, although a large number of the latter were present as visitors at one or more of the sessions. Dr Ida Scudder was a constant attendant. The Conference was fortunate to have among its speakers, Dr Dagmar Norell and Mr K. V. Rajan of the Nur Manzil Psychiatric Clinic in Lucknow and Dr Ram Dutt of the Theological Seminary in Bareilly. In the closing sessions the Conference confirmed some of the recommendations of the Conference held in Nagpur July 1952 and carried others a step further. September 9th left Vellore at noon and after a night in Madras to Nagpur. One Conference off and only two to go: the C.M.A. Biennial and the N.C.C. Triennial.

Kachhwa

September 27-October 1. Off by evening passenger to Itarsi. Next morning between trains dropped in on Dr Cotelingam at the Friends' Association and met Dr R. Fox. Off on the mail at 9 and arrived in Allahabad at 8 p.m. Met by Rev. R. C. D. Brow and taken to the Bible School where spent the night. Early breakfast and off at 7 the next morning in the Hospital car crossing the Curzon bridge over the Ganges and travelling by good road to the turn off to Kachhwa. Shortly after nine greeted by the Mission Secretary and soon after welcomed by Dr Nevile Everard. Then around the hospital, originally an indigo factory, then a station of the London Mission and now for 25 years the Hospital of the Bible Churchmen's Mission. The original buildings have been fairly well adapted and new ones added. The equipment of the theatre is extensive and good in quality. There is a training school for nurses

and in the past has been one for dispensers. Met Dr Gardiner and Sisters Atkins, Dean, Gould, Kutler and Joseph. The rest of that day studying the problems and conferring with the doctors and nurses. Off after lunch on the 30th to the little station to wait for the train for Allahabad, 1½ hours late. Had just convenient time to get to the main station, there have dinner and get on the Bombay Passenger before it left at 9.30. On the platform met the Jantzens of Bethesda Leprosy Hospital, Champa.

Back in Nagpur on the 1st evening by Grand Trunk.

NEWS NOTES

Arrivals in India

Dr J. B. Wyon of the Christian Medical College, Ludhiana after study leave in England and America.

Dr Jean Curran, President of the Christian Medical Council for Overseas Work and Principal of the New York State University Medical School in Brooklyn for a short visit with his son in Delhi.

Dr Clarke Case, Fulbright Scholar to Christian Medical College, Vellore.

Miss Alice Clark, acting Secretary of the C.M.A. and Secretary of the Nurses' Auxiliary from furlough in America.

Dr Eric Currant, from furlough to the Leprosy Hospital, Dichpali.

Dr J. Frimodt Möller from furlough to the Union Mission Tuberculosis Sanatorium, Arogyavaram.

Dr (Mrs) Mary More from furlough to Wardha in November.

Dr Stanley F. Thomas returning from furlough to the Moorshead Memorial Hospital, Udayagiri, Orissa.

Dr Deena Sonna returning from higher study in America to the Linn Dispensary and Health Centre, Yellari, Yadgiri Taluq, Deccan.

Departures from India

Dr Hale H. Cook of the W.F.P.M. Hospital at Wai on furlough advanced on health grounds. Friends will rejoice that Timothy, stricken with poliomylitis is making a satisfactory recovery.

Dr H. O. Newell of the London Mission Hospital, Jiaganj to England on furlough.

Dr Robert Sheaffer of the Seventh Day Adventist Hospital, Baragain, Ranchi District, in July on furlough.

Dr Jacob Chandy of Vellore on a Rockefeller Travelling Fellowship of four months.

Dr Annie M. McKay from Lakhnadon to Ireland on furlough.

Dr Bruce W. Jarvis on furlough.

Transfers and Postings

Dr J. C. Pedley formerly of Simla to the Mission Hospital, Manali, Kangra District., E. Punjab.

Dr E. P. Azariah formerly of the London Mission Hospital in Jammalamadugu, to the Green Memorial Hospital, Manipay, Ceylon.

Dr Lee M. Howard from the Clough Memorial Hospital, Ongole, to the Victoria Hospital, Hannumakonda, Hyderabad.

Dr S. Mondol after completion of her S.M.B. course in the Christian Medical College, Vellore, to Jiaganj as Medical Superintendent of the L.M.S. Hospital, Jiaganj. This hospital has now been integrated with the Bengal Church Council U.C.N.I. and its name changed to 'Khristya Seva Sadan'.

Dr A. Jarvis from the Star of Hope Hospital, Akividu to the Christian Medical Centre, Pithapuram.

Deceased

We regret to report the death on September 18th in Nallarakunnil House, Pallam, Travancore of *Dr Mary John*. A graduate of Ludhiana, Dr John served for over eight years in the Mennonite Hospital in Champa. From there she went to St Martin's Hospital, Ramnad where she served until her final illness. The sympathies of the Association are extended to members of her family.

On the Sick List

Friends of *Dr (Mrs) Mary Driver* for many years in charge of the Moravian Hospital in Leh in the Ladakh Valley will regret that she is not returning to her isolated station. During her furlough in England she was found to be suffering Disseminated Sclerosis.

Dr John Taylor of the Reformed Presbyterian Mission in Roorkee and father of Dr Carl Taylor has been ill for some weeks following an operation at Miraj Medical Centre.

Dr K. O. Mathew for over 30 years on the staff of the Willis F. Pierce Memorial Hospital in Madurai is recovering from a coronary attack.

Dr D. P. Gorde of the Miraj E.N.T. Clinic is recovering from a hemiplegia.

Dr and Mrs Virgil Zigler had a miraculous escape from death during the Godavery floods. They were in their bungalow when it collapsed but fortunately were thrown off the terrace into the water from which they were rescued by swimmers. Mrs Zigler was badly bruised but Dr Zigler sustained fractures of the nose the maxilla and the vomer and periosteal fractures of the right tibia, for which he later was admitted to the Christian Medical College Hospital, Vellore. The contents of their bungalow were all smashed or lost. The Mission Hospital at Rajahmundry was flooded up to five feet with extensive damage to furnishings and equipment. There was no loss of life in the hospital.

Gleanings

An illustrated booklet issued by the *Jackman Memorial Hospital* of the Disciples Mission in Bilaspur tells of the arrival of the first group of missionaries by bullock cart from Jabalpur in 1885, the opening of the present hospital building 50 years later and subsequent development. The latest major development is the opening of the Nurses' Hostel with quarters and classrooms for all the nurses and the consequent freeing of their quarters in the hospital for additional patients. This hospital has played an important part in the training of nurses, the organization and recognition of the Mid India Examining Board and in the development of post-graduate courses in Hindi. Miss Ruth Mitchell and Miss Ruth Harner are in charge of the Nursing. The hospital, now a general hospital, has developed under Dr Hope H. Nichoson, now on furlough in the United States. Dr Moti Solomon an M.B., B.S., of Vellore and with experience in America is now Medical Superintendent.

The Emery Hospital of the Salvation Army at Anand celebrated its Golden Jubilee this September. The Jubilee goal is a deep X-ray Therapy installation. Dr A. Bramwell Cook, the Medical Superintendent after 22 years of service, is proceeding to New Zealand in December. Dr Cook has not only been responsible for a large part of the development of the Hospital—he has played a large part in Association affairs as organizer of the Gujarat section of the C.M.A., organizer of the 13th General Conference of the Association at Baroda in 1951, member of the C.M.A. Executive and reader of papers in many conferences.

United Mission to Nepal

Drs Robert and Bethel Fleming of the Methodist Church in Southern Asia, at present associated with Woodstock School have been invited to establish a hospital at Tensen in Nepal together with welfare centres near Katmandu. With them are associated workers of the Presbyterian Church and representatives of other Boards. Let us thank God for this opportunity and remember the Mission in our prayers.

NOTICES

Pharmacist's Bulletin

Miss E. M. James has offered to issue a small journal dealing with drugs and pharmaceutical preparations for the information of compounders and those in charge of hospital drug rooms. This would deal with newer preparations as they come out and would also have compounding and dispensing notes. Such a bulletin would be published quarterly and should be of help to the hospitals and to their economy. The subscription would be Rs 2–3 per year. The carrying out of this proposal will depend somewhat on the demand. Will any who would be interested in receiving such a regular bulletin please drop a postcard to that effect to

Miss E. M. James, Pharmacist
Christian Medical College Hospital
Vellore, N. Arcot.

Bible Reading Fellowship

Copies may be obtained from Mrs Popovits, c/o Rallis India Ltd., 16, Hare St., Calcutta.

Situations Wanted

A registered and experienced English M.P.S. and his wife are anxious to engage in Mission or Church Work in India. He spent several years in India during the War. For further information write to the Secretary, C.M.A. Nelson Square.

Situations Vacant

Required: Experienced Doctor for village hospital and dispensary work. Preferably interested in preventive work also. Man or woman. Marathi language area, but Hindi would do. Pay according to experience and qualification.

Apply to Dr G. I. Jeffree, C.M.S. Mission Hospital, P.O. Pachod, Dist., Aurangabad, Deccan.

Stop Press

The Fourteenth General Conference of the Christian Medical Association of India was held in Nagpur, October 24th-27th, with an attendance of 88 doctors, 19 nurses and 9 visitors. The Association's name has now been changed to the Christian Medical Association of India. Full Report will appear in the next Journal.

Edite and Published by Dr H. H. Gass, Christian Medical College, Vellore
Printed in India by Hugh Warren at The Wesley Press and Publishing House, Mysore

NURSING NEWS

NURSES' AUXILIARY OF THE CHRISTIAN MEDICAL ASSOCIATION OF INDIA, PAKISTAN, BURMA AND CEYLON

No. 131 *November* 1953 No. 131

AIM

The Extension of the Kingdom of Christ through the Ministry of Health and Healing

OBJECTS

1. By mutual co-operation and encouragement and by the cultivation of a fraternal (brotherly) spirit among all Christian nurses.
2. By efforts to secure the highest efficiency in Christian nursing education and work.
3. By the spread of information concerning the need of nursing work and its place as an integral part of the Christian message.
4. To supply a means of effectual co-operation with the Christian Medical Association in considering matters of interest common to the Christian Medical and Nursing professions.
5. To consider the special work and problems of Christian nurses.

PRAYERS

Let us Pray that God may help us to use the Nurses' Auxiliary to extend the Kingdom of Christ.

Let us Pray that we and the Doctor (name) and Nurses (names) with whom we work shall here today hallow God's Name, seek His Kingdom, do His Will.

Let us Pray for our Officers that they and we together may do God's Will.

OFFICERS

President	Miss F. E. Gruchy, Hat Piplia, via Indore, M.B.
Vice-Presidents	Mid-India, Mr John Harrison, Mission Hospital, Ratlam, M.B.
	North India, Vacant.
	Bengal Area, Miss M. Hall, Duchess of Teck Hospital, Patna.
	Bombay, Miss Rachel Thomas, S.S.G. Hospital, Baroda.
	South India. Miss Aley Matthews, Scudder Memorial Hospital Ranipet.
Secretary-Treasurer	Miss Alice Clark, Nelson Square, Nagpur 1, M.P.
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Mid-India Board of Examiners	Miss L. Scott, U.C.C. Mission, Indore.
Language Editors—	
Telugu	Mr C. H. Matthews, Clough Memorial Hospital, Ongole.
Hindi	Mr John Harrison, Mission Hospital, Ratlam, M.B.

EDITORIAL

In these days of multiplied responsibilities, when there are so many calls upon our time, many professional people are not getting as much rest as they need. How often we hear, 'I could not sleep last night, had too much on my mind, I suppose,' or this, 'I go to bed, but am often too tired to sleep.' We read the advertisements which tell us that by drinking someone's beverage just before retiring, sound sleep is assured, but although we follow this advice, somehow it does not always work, and we get more and more tired, until the time comes when work is a burden, and we are no longer able to do the work the Lord has given us to do. Is He pleased about this? During the past week two articles on this important subject have been brought to our notice, and we reprint them here for the benefit of our members. They are thought provoking, especially as in the first we have the findings of three nurses who are interested in the subject.

NOTICE

Our Secretary, Miss Alice Clark, has returned from furlough in U.S.A. We wish her a happy and useful term of service as she once again resumes work in the C.M.A.I. Office in Nagpur. In future, all communications should be addressed to her there.

POST VACANT

Wanted: A Lady Compounder for work in a Mission Hospital Dispensary. Apply stating age and experience to the Secretary, Kinnaird Hospital, Lucknow.

FAREWELL TO MRS WATTS

(*By Courtesy of the Nursing Journal of India*)

The growth of Nursing as a profession depends primarily and largely on nurses themselves. There is nothing more inspiring and stimulating to the progress of the profession and its organization than a leader of broad understanding and great vision. Such a leader was Mrs E. A. Watts. So it was indeed with great regret that members of the T.N.A.I. met in the Christian Medical College Hospital, Vellore, on 29th August, to bid farewell to this pioneer in Nursing in India.

The function started with a tea party after which the guests were entertained by the students of C.M.C. Hospital. A travelling clock, the gift from the T.N.A.I., was presented to Mrs Watts by Miss Jacob, President, Madras State Branch.

Miss E. Lund, Secretary, Madras State Branch, in her farewell address, said that Mrs Watts had actively participated in all national conferences and had represented the T.N.A.I. at many of the I.C.N. Congresses. During 38 years of service in India she was always met with great regard and affection. Arriving in India in 1914, Mrs Watts was one of those few who pulled the organization through the years

of war. As Vice-President of the T.N.A.I., Secretary of the Nurses Auxiliary of the C.M.A.I. and a member of the executive committee of the Madras State Branch, Mrs Watts has given her guidance and wise counsel toward furthering the cause of nursing in India.

Mrs Watts in thanking the members said that it was her privilege to have served in India, remarking that 'nursing is a profession, vocation and a ministry. Most of us being Christian nurses we should follow the steps of our Master Jesus Christ, bearing in mind, our motto of the State Branch: "I serve".' Dr Ida S. Scudder, Principal Emeritus Christian Medical College, closed the meeting with a prayer.

We will surely miss Mrs Watts and her cheerful disposition and winning smile, in our future gatherings.

Our good wishes and prayers accompany Mrs Watts as she sails to England. May she spend many years of rest and happiness there.

VIOLET JOTHIVAI,
Secretary, T.N.A.I. Vellore Unit.

SLEEP

For our project during our senior year we decided to find out as much as we could about sleep so that we would be able to give better care to our patients by helping them relax.

How much sleep do we need? The need, we learned, varies with age, occupation, activity, temperament, and the state of a person's health. Actually most of us do not need as much sleep as we think we do. If some part of the day is spent in mental and physical relaxation, then less sleep is usually required at night. At home under familiar conditions it is easier to relax and, therefore, less sleep should be required than in a strange environment.

But the patient in the hospital, even if he is free from pain, experiences a certain amount of discomfort because he is in a strange bed in a strange environment. He may worry about his wife who always forgets to lock the doors at night. What if a prowler should know her habits and decide she would be an easy prey? Besides, did he mail that letter cancelling his appointment with Mr Jones?

He thinks, 'My goodness, it's warm in here and I miss my usual bedtime snack. How can I go through with all those tests tomorrow if I'm a nervous wreck? Guess I'll call the nurse and tell her I need a sleeping pill or I'll never get any rest tonight'.

All too often when the busy nurse answers his call, she readily agrees to get his sleeping pill for him. Perhaps if she had recognized the reasons for his insomnia and had taken more time, she might have helped him adjust to the hospital situation, relax, and go to sleep.

She might do this by getting him to talk about objective rather than subjective things. While doing the little things that mean so much to the patient—giving a back rub, smoothing the bed, adding an extra blanket, providing more ventilation without draft—she could be talking to him. She might discover that he is hungry—perhaps a glass of milk would be all he needed to help him relax and sleep.

We learned that fatigue may be due to either physical or psychological factors. Infectious agents in the body or disturbances in metabolic functions can cause physical fatigue; a tense emotional state causes psychological fatigue. Regardless of the cause of the fatigue most patients need help in relaxing.

When we were on the wards, we tried to put into use the information we had gathered on sleep, by substituting comfort measures for drugs and we found that it could be done. We listened to our patients' problems, served light lunches, if the patient was not on a restricted diet, changed his position so that he had better reading light and air—even a different room-mate if desired, and gave back rubs at bed time. When we were on evening duty, we visited each patient before he went to sleep to reassure and cheer him. And when we were on day duty we tried to make the patients' waking hours pleasant and fruitful so that sleep, at bed time, would follow as a natural process.

Our project has helped us realize that although drugs are often necessary to induce relaxation, withholding them until all other methods of inducing sleep have been tried and found unsuccessful, is an important part of good nursing care.

(*By Courtesy of The American Journal of Nursing*
—Condensed)

CAN YOU SLEEP WELL?

By L. L. DUNNINGTON

Causes of sleeplessness

1. One of the causes of nocturnal wakefulness is the sedentary character of our modern way of living. We do not exercise enough in the fresh air.

2. Improper diet is another cause of sleeplessness. Our bodies are fearfully and wonderfully made. They contain the same identical elements as any good rich acre of ground. When that ground, however, has its rich top soil washed away by erosion or cropped away by taking off crop after crop without putting any fertilizer back, certain elements finally disappear. Food crops grown on such land cannot take unto themselves the elements that are no longer there. The result is devitalized food. The human body in turn is then deprived of what it needs with the attendant maladjustment that is sure to follow.

3. Too much rich food is just as bad as too little, especially when eaten late at night. Doctors tell us that, generally speaking, no food should pass our lips after we have partaken of an ample evening meal. The stomach should be empty when we retire; otherwise the chemical factor has to work all night converting the food into an assimilable form of energy when it should be through with that job before we go to bed.

4. The greatest robbers of all, however, are the worries, fears and guilt complexes that we have carried around all day and think about after we have retired. The last things we think about before dropping

off to sleep are the things which remain closest to the surface of the unconscious mind and the ones that are apt to spring first into consciousness when we awaken in the night. Then, if we have no technique for putting ourselves back to sleep; if we have no definite system of thought control these worries start churning round and round, and we are good for several miserable hours of wakefulness. Add to that the fear that we shall presently have to get up and face the new day more tired than when we went to bed, and we are really in for it!

Thought Control

Sleeping pills are definitely not the answer to insomnia except under extraordinary circumstances and under doctor's order. Taken regularly, the dosage must be increased. The larger amount of drugs has a toxic effect that makes the next day a nightmare of listlessness. Physicians now tell us that sleeping pills taken regularly over a long period of time tend to destroy our nerve centres.

Sound sleep is largely a matter of thought control. The power of suggestion must be properly comprehended and utilized in the most positive way. Remember that when an affirmation is repeated again and again, either by one's self or by a counsellor the deep mind must accept it and bring it into manifestation. That is the law of mind. The Creator made us that way. Prayer, faith and suggestion are tied together with an indissoluble bond. Our great care must always be to keep our critical conscious mind on the job sifting truth from falsehood so that we allow ourselves to dwell only on what is true. God will then bring that to fruition, through faith, suggestion and affirmation.

Practical Steps

Now, having established the function and place and power of suggestion in any workable technique for putting ourselves to sleep, let us list a number of successive steps that, if taken in this order, will positively accomplish the desired results.

1. Think only pleasant thoughts for at least an hour before retiring. Please don't tell me you can't help yourself at this point; that if you are worried, you are worried, and you can't keep out such thoughts. Say to yourself, 'I am in control here and I now decree that before I go to sleep I shall concentrate only on the God of love, peace, poise, power and radiance. No negative thought shall be allowed to come in, for there will be no room.' When a room is full of light, darkness just isn't there. Get into the driver's seat and stay there. Assert dominion and demonstrate your power of control.

2. When you get in bed, settle yourself in the most comfortable and restful position and use the power of suggestion to relax.

Food for the Mind

3. Repeat an old promise from the Bible: 'He giveth His beloved sleep'. Say it slowly a dozen times and believe it. Also: 'Underneath are the everlasting arms'. Cradle yourself thus in the arms of the infinite. Give yourself this great basic security, this blessed safety: 'I will lay me down in peace and will take my rest, for it is Thou Lord, only, who

makest me to dwell in safety'. Learn these promises by heart so there is no effort at remembering them. Repeat them over and over, slowly, meaningful, until the deep mind has no other choice than to bring them into glorious sleep-producing manifestation.

4. Visualize yourself as sound asleep. If your flitting mind begins to wander, assert your mastery and dominion and bring it back to the business in hand—but don't worry about it. Smile and keep concentrating on the vision and the verses.

5. Let your breathing be deep, very deep, regular and rhythmical. This is important. The body and mind love rhythm. The blood stream is thereby being purified by an abundance of fresh air (we are assuming that you have a window open!) and this soothes your tired nerves. If your wayward mind sneaks back to a worry thought, you will find that you have stopped breathing deeply and are hardly breathing at all. Smile at this low-down double cross and get right back on the beam.

That's all there is to it. Do these five things and keep on doing them and you are bound to sleep. If you awaken in the night, put yourself back to sleep by the same technique before you have allowed the fear-worry train of thought to get you wide awake.

A woman told me she hadn't had one good night's sleep for years. Her husband had died leaving her with a large family to support. Two breast cancers had been removed, and these radical operations had shattered her nerves and her confidence. I told her of the above technique and guaranteed she would be compelled to sleep if she did exactly as I suggested. She said that she knew that it wouldn't work because she had 'tried everything', but she'd give it a good try. The next morning she looked refreshed as I had not seen her for years. 'I hate to admit that you were right', she said, 'but it worked'.

(Condensed from *Religion and Health*)

EVOLUTION OF PUBLIC HEALTH

By LILLIAN BISCHOFF

(*Continued from September Issue*)

Today in the areas where public Health sanitation and applied personal hygiene are the accepted way of life of the people, where public health facilities are available to all the people, the crude or general death rates have fallen to a new low figure. In the Latin area of Europe death rates have fallen from 14-20 in 1940 to 11-13 per 1,000 in 1950.

Public health programmes from the earliest times accepted responsibility for hospitalization of persons suffering from leprosy, tuberculosis and other communicable diseases and for patients with mental disorders. Public administration of general hospitals was and is essential for the care of persons unable to pay for private medical care. Home care of the sick by the public health nurse was one of the forerunners of public health programmes in many communities.

Although the public health people saw and felt the need for rendering medical care programme along with the preventive programme, it was better that they concentrated on the preventive aspects of the problem first. Medical care problems are so costly and so demanding that they might well absorb the time, the money and the total facility of the medical group to the exclusion of the preventive work. In those situations where the preventive programme has been in operation for a time, the conditions for which it was originally established, namely, the control of communicable disease, have almost completely disappeared. With the eradication of these conditions through environmental sanitation, immunization and education, professional attention has been directed toward some of the other Destroyers. Heart disease and cancer are the chief destroyers in countries where malaria and other communicable diseases have been conquered. The public health programmes, in co-operation with other private and public agencies, are attacking these problems with vigour and it is expected that the causes, prevention and cures will be revealed during our generation.

This is by no means the whole story of the evolution of public health. We conquer communicable diseases through environmental sanitation measures, by immunization, by legal quarantine of people passing through international boundries, and by destroying disease vectors; we know how to save mothers and babies from death and from disability; we know how to prevent industrial and transportation accidents and we have done a great deal to improve life and living through genetics and nutrition. Housing, food production, and general education have worked together to bring about changes in the habits of people. Tuberculosis, cancer, polio, heart diseases, and other debilitating conditions are yet to be conquered.

Public health nursing has been a major influence in the total movement of public health. Nursing is Public Health. The story of the growth and development of public health nursing reveals that much of the pioneer work, particularly in towns and villages was initiated and developed by nurses working under the auspices of Red Cross, Tuberculosis Associations, Church or other private agencies. The nurses who worked with Mr William Rathborne, an outgrowth of Florence Nightingale's work, were limited to the home care of the sick. As scientific knowledge increased and as the public accepted responsibility for the establishment and maintenance of facilities and personnel, the *generalized* programmes of public health developed.

Today, the public health nurse was and is the member of the public health team that renders personal services to the individual and family, in homes, schools, in factories and everywhere that people are found. She helps with the planning, with administration and with the development of the total programme of public health. By demonstrating public health services and explaining the advantages of other health services to the people, she, in many situations, helps awaken the people to action, whereby the advantages of public health are fully realized.

The topics that will follow in this series will deal specifically with the various phases of the modern public health schemes, both in India and in other countries of the world.

Public health works in the framework of Creation, Maintenance and Destruction. Public health utilized scientific knowledge and

techniques to help insure the best *Creation* in man, animal and plant; to provide and share the knowledge of modern science with the people so that each person may attain and *maintain* maximum physical and mental growth and development and thus a full, useful life; and to ward off and control the forces of *Destruction* within the environment and those that, because of no fault of his own, attack the individual.

It is good to think, in terms of the Hindu faith, that the Gods of Creation and Maintenance have won a great victory over the forces of the Destroyer. It takes constant vigilance to hold the gains that have been achieved.

CHRONOLOGICAL SUMMARY

In Prehistoric Times: It was generally believed that sickness was caused by evil spirits.

Early Civilizations: There was a genuine belief in supernatural beings who hold sway over various parts of the body. Treatment of disease was a matter appealing to Jehovah. The Scroll of Law in the early Jewish Kingdom recognized that certain diseases were communicable. Priests taught that *isolation, quarantine, and cleanliness* helped to prevent spread of disease.

Ancient Greece: To about 300 B.C. people believed that Gods controlled all human destiny. Hippocrates, the father of Medicine, taught that each disease comes from a natural cause. His teachings introduced scientific methods into the study of treatment of disease. The youth of Athens were taught to give their bodies exquisite care.

Graeco-Roman Period: About 300 B.C. to A.D. 200 skill in surgery developed as a means of caring for wounded soldiers and gladiators. Galen summarized known medical knowledge and made experiments in physiology (A.D. 131-120). Public sanitation, aqueducts, public baths and sewers were built and utilized.

Middle Ages of Medicine: Plagues and pestilence looked upon as having supernatural rather than natural causes. Quarantine instituted to check spread of epidemics. Organization of hospitals and sick nursing.

The Sixteenth Century: *Rebirth of Science*—Traditional belief and practice in medicine prevailed. Curiosity about the natural world paved the way for (1) the development of chemistry in the science of healing, (2) the founding of the science of anatomy and (3) great improvement in the art of surgery.

The Seventeenth Century: Belief in witchcraft reached its height. William Harvey (1578-1657) discovered the circulation of blood. Antrin Von Leeuwenhoek invented the microscope and saw and drew bacteria (1683).

The Eighteenth Century: Most important development in public health.

1. Movement for better living and working conditons.
2. Citrus fruit and fresh vegetables used to prevent and treat scurvy.
3. Jenner introduced vaccinations against smallpox.

The Nineteenth Century: Rapid scientific advance. Public health movement progressed to:

1. Sanitary laws were passed.
2. Public Health departments were organized.
3. Founding of modern nursing.

Discoveries: Louis Pasteur (1822-1895) Bacteria—rabies.
Robert Koch (1843-1910) Tuberculosis.
Marie Curie (1867-1934) Radium.

Lister introduced antiseptic surgery: The stethoscope, clinical thermometer, X-ray, and various physical and chemical aids in diagnosis were discovered and used during this period. Preventive measures against communicable diseases by immunization. (typhoid and diptheria) Healthful living as a means of resistance against tuberculosis.

The Twentieth Century: The greatest progress in man's fight against disease.

Major discoveries: 1901—Blood transfusions made possible by discovery of blood groups by Dr Karl Landsteiner.

1910—Chemotherapy '606' discovered by Erlick and effective treatment of syphilis.

1922—Insulin—successful treatment of diabetes.

1935—Sulfa drugs introduced.

1941—Blood Plasma breakdowns into fractions.

1935 to date—Antibiotics Penicillin D.D.T.
New anaesthetics
Nutrition—Discovery of vitamins founded modern science of nutrition.

Founding of the mental hygiene movement placed the treatment of mental illness on a scientific and humane basis.

Expansion of public health nursing, protection of mothers and babies, organized movement to control tuberculosis, and community participation in programmes designed to protect and maintain health are among the major achievements of the twentieth century.

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LOVE'S RECKONING

1 Cor. 13:4

REJOICES NOT IN INIQUITY

1 Cor. 13:6

We have seen that there are three elements in Love's attitude to wrong: It refuses to be provoked; it thinks no evil. The word for 'thinketh' is the one used in totting up a row of figures, or making an entry in a ledger. It is the word of an accountant or book-keeper. 'Love does not reckon up' the evils done to it.

Consider the power of thought in the inner life, and not least in the life of love. 'As a man thinketh in his heart so is he'. Our thought moulds our life. In the sphere of human friendship we become like our friend. Twin souls become yet more like to one another. This is quite a marked feature in the case of many who have enjoyed a close union of married life and have grown old together. Thought-life finds an outlet in character. Inter-change of thought will make us like each other.

Love does not think about evil. It conjures up no thought-images of evil; it keeps no Daybook; it has no ledger for the entry of debts; it never reckons up what it is owed. Love never finishes the day without passing the sponge over the slate which records what it endures at the hard hands and hearts of others.

We may not be the complete masters of our minds, but we may determine what we remember. Some of us forget the wrongs we do to others. Some of us forget the wrongs others do to us. Love keeps only a list of creditors, never of her debtors. Of course Love's eyes may and must not be shut to wrong as wrong. She must ever uphold the right. She must never sheathe the sword in the presence of wrong; but in the presence of personal affront, she must be blind and unarmed.

Why is this so? It is because Love is bent on winning the battle for others that she makes light of the wounds received in the encounter. Love does not reckon up evil. She uses her last breath to whisper: 'Father, forgive them, they know not what they do'; 'Lord lay not this sin to their charge'.

With regularity of pulse and with eternal patience and persistence, the ocean flings its waves against the black forbidding cliffs, only to have them dashed in foam and spray. What then, does the ocean cease its effort? Nay, it gathers up its foam and spray and forms it into another wave and flings it back again. So God's love never subsides, never gives up, never abandons hope and effort.

All the scenes about the Cross are a beautiful example of this truth. The Love of God that had beaten at the door of men's hearts down the ages, and had been rejected, and thrown back, gathers up itself in a yet more loving attempt to win the rebel back. When servants and prophets had been shamefully treated, the Father sent His Son. 'God commendeth His love toward us, in that, while we were yet sinners, Christ died for us.'

What awful harm has been done to others and ourselves by harbouring wrong thoughts, unlovely and unfair motives, jealousies, prejudices,

and resentments against others. So often they were unjustified, and then they harmed us both. And if they were right and justified, they did the same. For all such thoughts have a hurtful reaction on our own souls, and they tend to belittle our friend in our eyes.

The grizzly bear and the elephant are credited with strange powers of memory for a wrong done to them, and uncanny ingenuity for revenge. But who wants to go down to the level of the animal and be a grizzly bear or an elephant! God made us in His likeness, let us live up to that.

How much has the loving Father in heaven wiped off the slate against you? Are we not all described in the Master's parable, Matt. 18:23-35? We all feel, when we think about it, that we belong to the ten thousand talent group. And the master wipes the slate of all that is against us. But how many of us thus forgiven, go out and act like the servant in the parable? Some one offends us in some little thing, and we take them by the throat and will not let go until the last penny of reparation is paid. It is not Love's way. Love love's to cancel personal debts; she will not reckon up the insults and affronts she receives. The sun never goes down on her wrath. By sunset the slate is wiped clean. She does not reckon up and keep an account of evil. 'Love thinketh no evil'.

Let us deliberately set ourselves to do this. In His power and grace we can. It is Love's way.

'Love scarce is love that never knows
The sweetness of forgiving'.

This is the third word relating to Love's attitude to wrong. Two phrases are used for God. John says: 'God is Love' and 'God is light'. Love is also light, and because Love is light, therefore she hates all wrong. And she hates wrong for two reasons: first, because it is wrong; and second, because wrong is the enemy of the object of her love. A pure-hearted father and husband hates wrong because it is wrong, and he hates it because it would harm his loved ones.

Love can never be pleased at another's failure, or at any error, because Love is pure, and shrinks from any darkness of evil. Love is very sensitive, and shudders at any near approach of wrong. What light this casts on Christ's bearing of our sin and shame. Was it that that nearly killed Him in the Garden of Gethsemane? The phrases that are used to describe His condition suggest that He was at the point of death. Any one would be at the point of death who sweat blood! He was approaching the last hour, the moment when the Lord would lay on Him the iniquity of us all. His pure, stainless, holy Being shrank from embracing the sin of the world. The thought of it nearly killed Him. A pure-hearted soul is horror-stricken at the thought of sin. To rejoice at sin when seeing it in others is a sign of deep debasement.

What an error the Amalekite made when announcing Saul's death to David. He thought he would receive a rich reward at David's hand. He thought David would rejoice to hear that his enemy had fallen. Instead, David's sensitive and noble soul was deeply wounded, and David sang the funeral dirge that has been unsurpassed since, and that came from such deeps in David's soul that it has touched the deeps of every generation.

How can we deal lightly with that deep, dark, destroyer, sin? Love cannot treat it lightly. Only fools make a mock at sin. Proverbs 14:9. What a fearful national situation is described in Hosea 7:3. 'They make the king glad with their wickedness, and the princes with their lies'. Paul describes some who have descended to great depths: 'who knowing the judgment of God, that they which commit such things are worthy of death, not only do the same, but have pleasure in them that do them'. In the last hours of the Jewish nation's existence, its spiritual leaders 'were glad and covenanted to give him money', so Judas sold his Lord.

Have you never had pleasure in the loss of another's reputation? Have you had no unbearable itch to pass on some scandal, especially if about some one you did not like? It is a sign of deep debasement, and a far departure from love.

Love covereth a multitude of sins. Have you Love's outlook on wrong?

O Love Who hast blotted out may transgressions, Who hast cast them behind Thy back, Who hast sunk them in the depths of the sea, Who hast covered them in the blood of Thy blessed Son, teach me Thy love that I may do the same. Thou hast been sore pained at every least failure of mine, Thou hast grieved and never rejoiced at my sin; give me to share that pain and shame when others fail. Give me that heart of Him of whom it stands written:

'He took my loathsome sin and shame,
(And I, must I go free?)
Then graved His palms with my own name,
And thirsted for my purity'.

DAILY BIBLE READINGS

December			Daily Text to be Learned by Heart	Reference Text
1	Tu.	Hebrews 11: 24	By faith Moses. . . . refused to be called the son of Pharaoh's daughter	Luke 14: 33
2	W.	„ 11: 39	These all. . . . obtained a good report through faith	Proverbs 22: 1
3	Th.	„ 12: 1	Let us run with patience the race that is set before us	Phil. 3: 14
4	F.	„ 12: 28	Let us. . . . serve God acceptably with reverence and godly fear	Revelation 22: 3, 4
5	S.	„ 13: 8	Jesus Christ the same yesterday, and today, and for ever	Revelation 22: 13
6	Su.	„ 13: 16	To do good and to communicate forget not ...	James 4: 17
7	Mon.	Ezekiel 1: 3	The hand of the Lord was there upon him ...	Psalm 18: 35
8	Tu.	„ 1: 26	Above the firmament. . . . was the likeness of a throne	Psalm 45: 6
9	W.	„ 3: 10	All my words that I shall speak unto thee receive in thine heart	Psalm 119: 11
10	Th.	„ 3: 24	Then the Spirit entered into me, and set me upon my feet	Romans 8: 9
11	F.	„ 8: 4	The glory of the God of Israel was there ...	Psalm 90: 17
12	S.	„ 9: 6	Come not near any man upon whom is the mark	Exodus 12: 13
13	Su.	„ 11: 19	I will put a new spirit within you	2 Corinthians 3: 17
14	Mon.	„ 18: 20	The soul that sinneth, it shall die	Romans 6: 23
15	Tu.	„ 34: 15	I will feed My flock	Psalm 23: 1
16	W.	„ 34: 25	I will make with them a covenant of peace ...	Romans 5: 1
17	Th.	„ 36: 27	I will put My Spirit within you, and cause you to walk in My statutes	Romans 8: 14
18	F.	„ 37: 6	Ye shall know that I am the Lord	Hosea 6: 3
19	S.	„ 37: 27	I will be their God, and they shall be My people	Isaiah 43: 1
20	Su.	2 Peter 1: 10	Give diligence to make your calling and election sure	2 Timothy 2: 15
21	Mon.	„ 1: 16	We. . . . were eye witnesses of His majesty ...	John 1: 14
22	Tu.	„ 3: 9	The Lord is not slack concerning His promise	2 Corinthians 1: 20
23	W.	„ 3: 14	Seeing that ye look for such things, be diligent	Matthew 24: 46
24	Th.	Titus 1: 9	Holding fast the faithful Word	Revelation 3: 11
25	F.	„ 2: 11	The grace of God that bringeth salvation hath appeared to all men	Matthew 1: 23
26	S.	„ 3: 5	According to His mercy He saved us ...	Lamentations 3: 22
27	Su.	Psalm 72: 15	Daily shall He be praised	Psalm 150: 6
28	Mon.	„ 73: 1	Truly God is good	Psalm 31: 19
29	Tu.	„ 73: 28	It is good for me to draw near to God ...	Luke 24: 15
30	W.	„ 74: 12	God is my King of old	Exodus 15: 28
31	Th.	„ 74: 16	The day is Thine, the night also is Thine ...	Psalm 139: 12
		January		
1	F.	Psalm 80: 17	The man. . . . whom Thou madest strong ...	Col. 1: 11
2	S.	„ 81: 6	I removed his shoulder from the burden ...	1 Peter 5: 7
3	Su.	„ 82: 2	How long ill ye judge unjustly?	John 7: 24
4	M.	1 Chron. 11: 9	David waxed greater and greater; for the Lord. . . . was with him	2 Chron. 27: 6
5	Tu.	„ 11: 21	He was their Captain	Joshua 24: 15
6	W.	„ 12: 18	Thy God helpeth thee	2 Chron. 16: 9
7	Th.	„ 13: 14	The Lord blessed the house of Obed-edom, and all that he had	Proverbs 10: 22
8	F.	„ 14: 15	God is gone forth before thee	John 10: 4
9	S.	„ 16: 1	They offered burnt sacrifices . . . before God	2 Chron. 29: 27

January			Daily Text to be Learned by Heart	Reference Text
10 Su.	1 Chron.	16: 11	Seek the Lord and His strength, seek His face continually	Psalm 27: 8
11 Mon.	,,	16: 31	The Lord reigneth	Psalm 29: 10
12 Tu.	,,	17: 10	I will subdue all thine enemies	1 Cor. 15: 57
13 W.	,,	17: 18	Thou knowest Thy servant	Psalm 139: 3
14 Th.	,,	21: 1	Satan. . . . provoked David	1 Pet. 5: 8
15 F.	,,	21: 17	I it is that have sinned and done evil indeed	1 John 1: 9
16 S.	,,	22: 9	I will give peace and quietness	2 Thes. 3: 16
17 Su.	,,	28: 10	Take heed. . . . for the Lord hath chosen thee	John 15: 16
18 Mon.	,,	28: 20	He will not fail thee, nor forsake thee ...	Joshua 21: 45
19 Tu.	,,	29: 9	The people rejoiced. . . . because. . . . they offered willingly to the Lord	2 Cor. 9: 7
20 W.	,,	29: 17	Thou. . . . hast pleasure in uprightness ...	Psalm 51: 6
21 Th.	Rev.	1: 7	Behold, He cometh	Hebrews 10: 37
22 F.	,,	1: 18	I am He that liveth. . . . behold, I am alive for evermore	John 14: 19
23 S.	,,	2: 4	I have somewhat against thee	Psalm 139: 23
24 Su.	,,	2: 11	He that hath an ear, let him hear what the Spirit saith	Isaiah 50: 4 (RV)
25 Mon.	,,	2: 13	I know Thy works	1 Cor. 3: 13
26 Tu.	,,	2: 26	He that overcometh. . . . to him will I give power	Rev. 12: 11
27 W.	,,	3: 2	Be watchful	Matt. 24: 46
28 Th.	,,	3: 8	Behold, I have set before thee an open door	John 10: 9
29 F.	,,	3: 20	Behold, I stand at the door, and knock ...	Proverbs 23: 26
30 S.	,,	4: 8	Holy, holy, holy, Lord God Almighty ...	Lev. 11: 44
31 Su.	,,	5: 9	Thou. . . . hast redeemed us to God by Thy blood	1 Pet. 1: 18, 19

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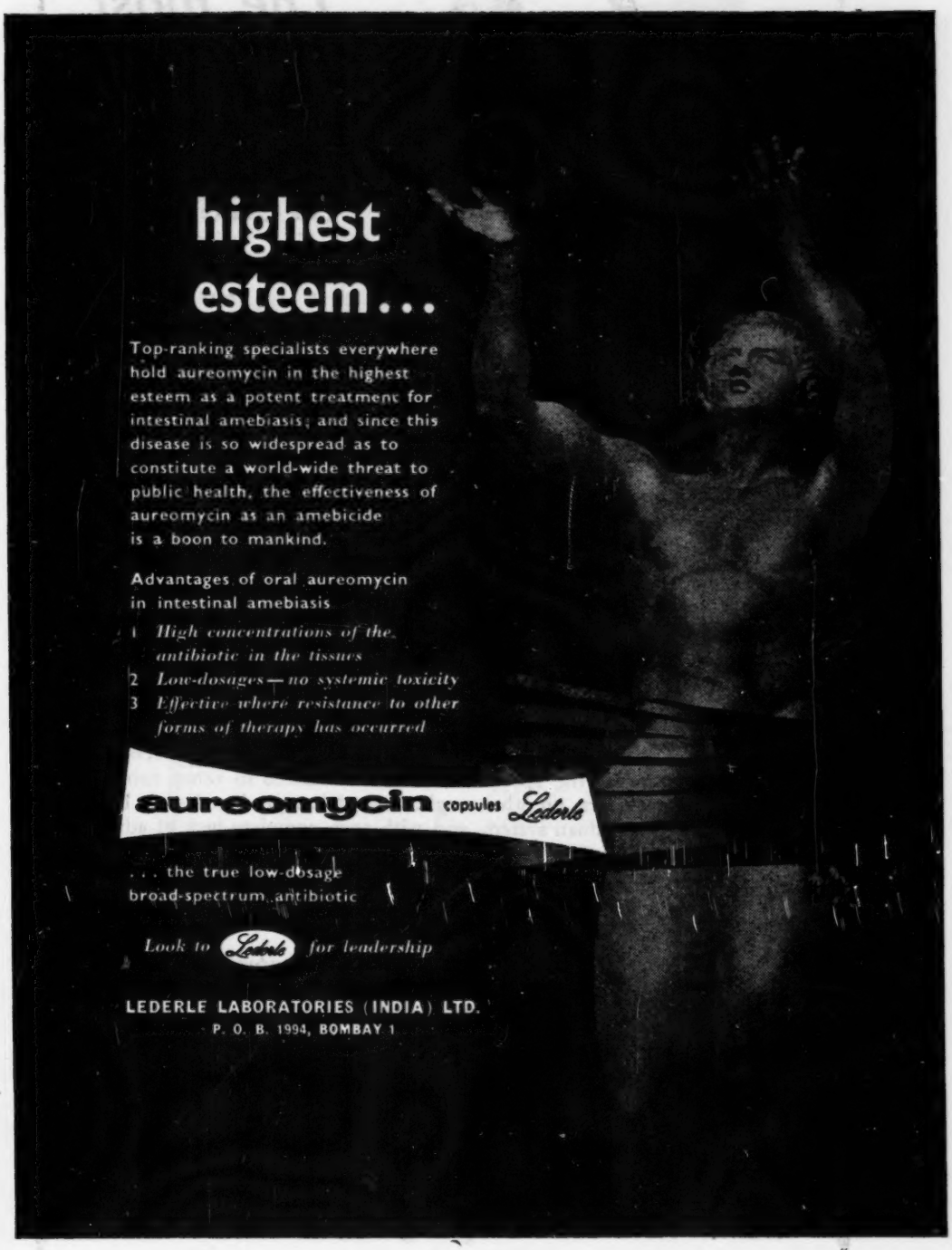
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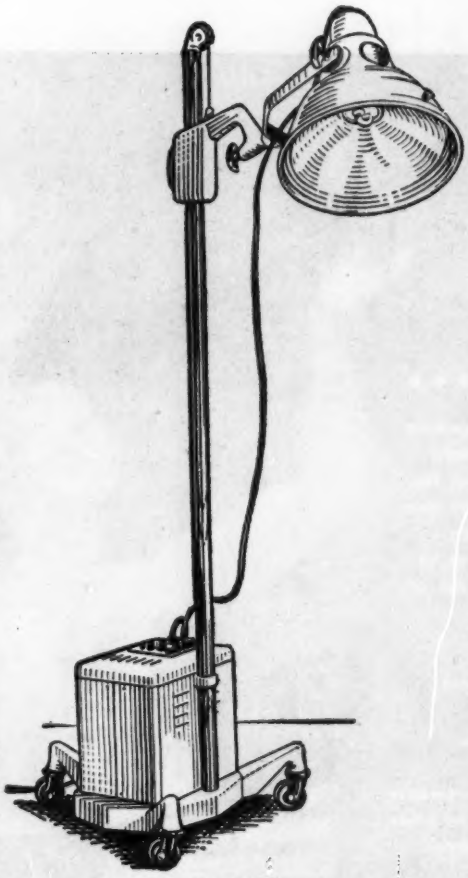

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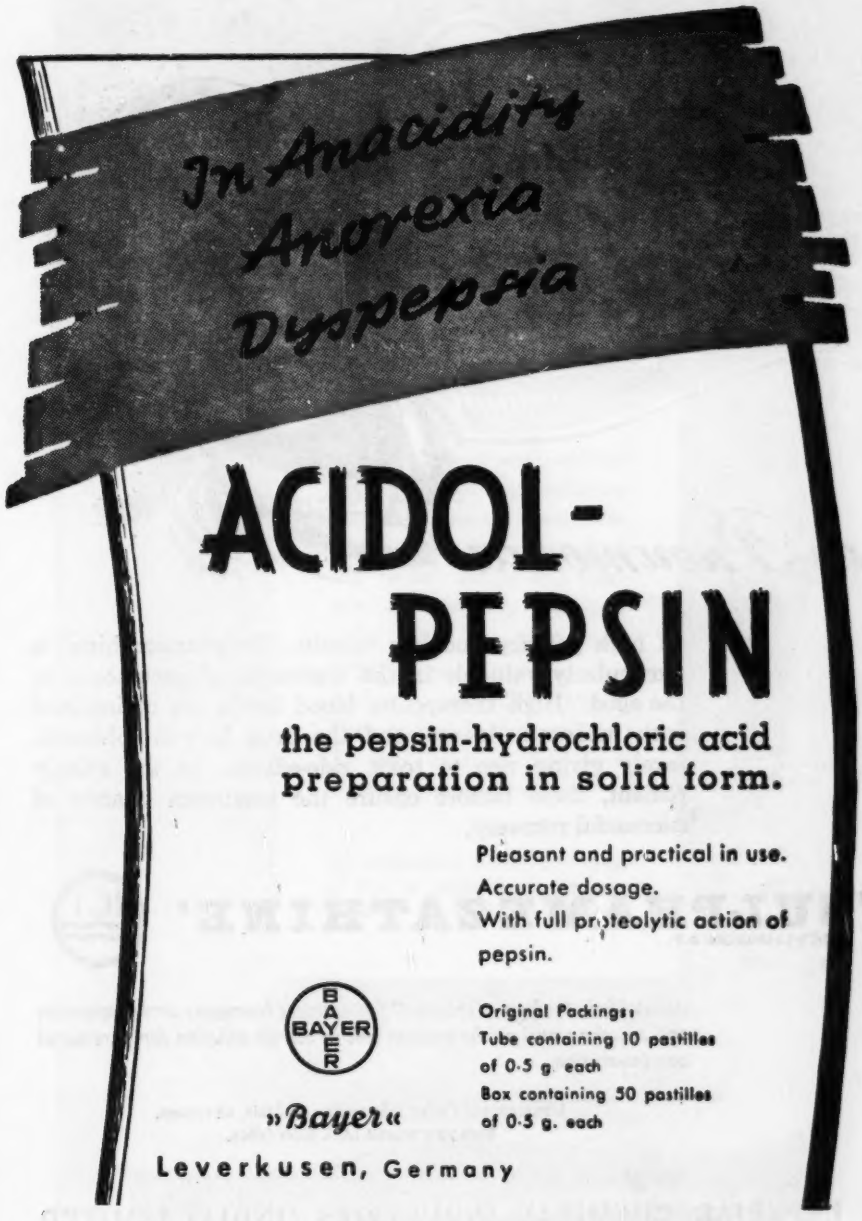

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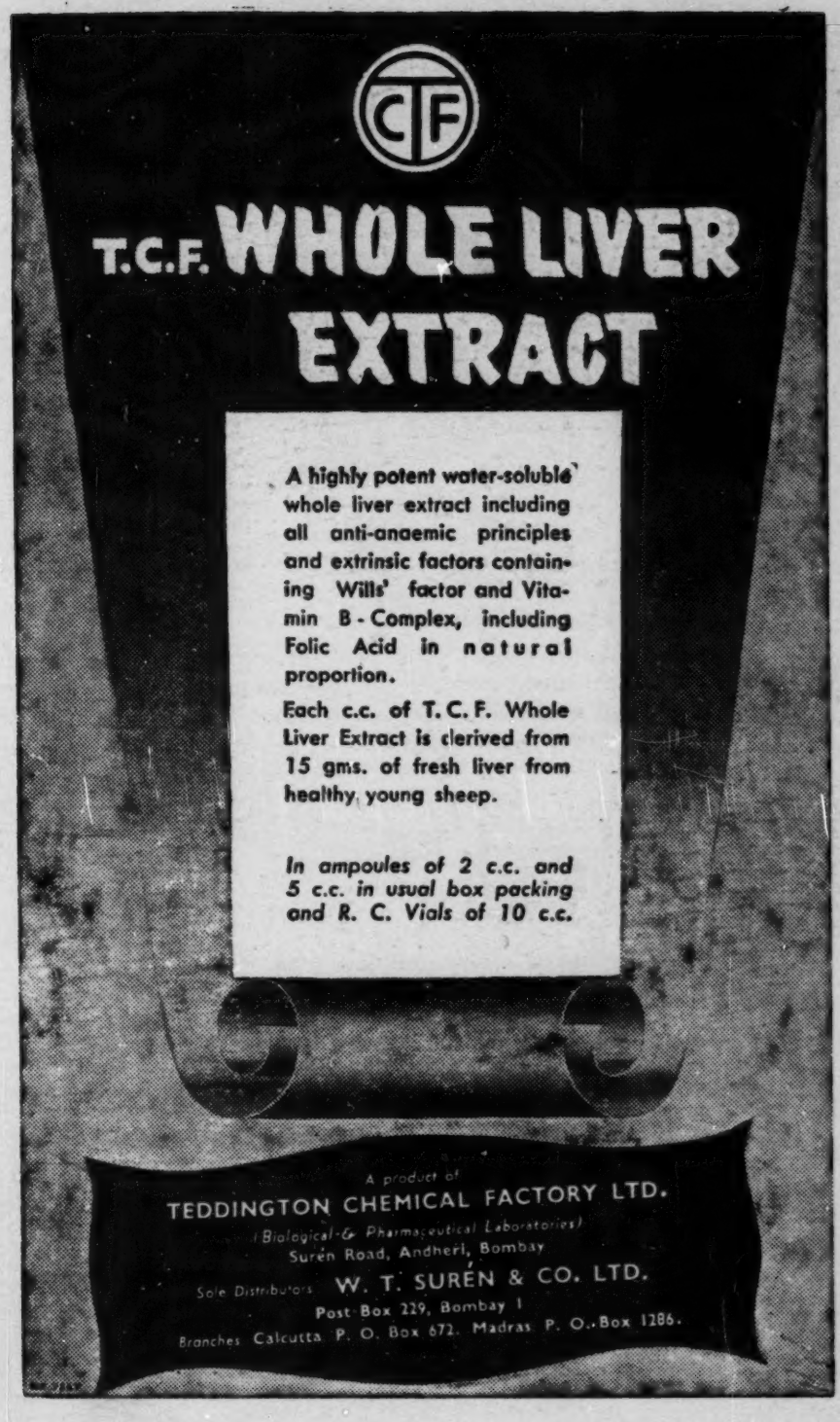
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